March 1, 2016

Alabama 9-1-1 Board
Reference: AL-NG911-RFP-16-001
1 Commerce ST
Suite 610
Montgomery, AL 36104

RFP requirement for Section 2.2:
The Transmittal letter must address the following topics except those specifically identifed as "optional."

This letter serves as our transmittal for the company's response to above captioned RFP.

2.2.1 - INdigital understands and acknowledges the information and requirements of Section 1 of the RFP.

2.2.2 - The company is qualified to provide, and will deliver the products and services as proposed under the contract terms as established by the RFP and mutually agreed upon.

Additionally, it is our intent to begin planning and work activity as described in the proposal as quickly as practical after the signature of a negotiated contract.

Respectfully submitted,

Mark Grady, Founder and President

With additional primary contact information of: sales@INdigital.net and the address and phone information below.

1616 Directors Row • Fort Wayne, Indiana • 46808
voice or text 877-469-2010 • fax 260-469-4329 • e-Mail: info@indigital.net • www.indigital.net

AL-NG911-RFP-16-001 Next Gene
appendix B - Business Proposal
Instructions

Tab Name
Business Proposal

ration 911 Systems and Services

Instructions
Please fill in the cells shaded yellow and indicate if any appendixs are included in the response to each item. Some items require a yes/no answer and an explanation if the answer is no.

AL-NG911-RFP-16-001 ATTACHMENT B - BUSINESS PROPOSAL

2.3.1 GENERAL (OPTIONAL)

The Respondent may use this optional section of the business proposal to introduce or summarize any information the Respondent deems relevant or important to the State's successful acquisition of the products and/or services requested in this RFP.

2.3.2 RESPONDENT'S COMPANY STRUCTURE

The legal form of the Respondent's business organization, the state in which formed (accompanied by a certificate of authority), the types of business ventures in which the organization is involved, and a chart of the organization are to be included in this section. If the organization includes more than one product division, the division responsible for the development and marketing of the requested products and/or services in the United States must be described in more detail than other components of the organization.

2.3.3 COMPANY FINANCIAL INFORMATION

This section must include the Respondent's financial statement, including an income statement and balance sheet, for each of the two most recently completed fiscal years. The financial statements must demonstrate the Respondent's financial stability. If the financial statements being provided by the Respondent are those of a parent or holding company, additional financial information should be provided for the entity/organization directly

2.3.4 INTEGRITY OF COMPANY STRUCTURE AND FINANCIAL REPORTING

This section must include a statement indicating that the CEO and/or CFO has taken personal responsibility for the thoroughness and correctness of any and all financial information supplied with this proposal. The particular areas of interest to the Board in considering corporate responsibility include the following items: separation of audit functions from corporate boards and board members, if any, the manner in which the firm assures board integrity, and the separation of audit functions and consulting services. The State of Alabama will consider the information offered in this section to determine the responsibility of the Respondent.

The Sarbanes Oxley Act of 2002, H.R. 3763, is NOT directly applicable to this procurement; however, its goals and objectives may be used as a guide in the determination of corporate responsibility for financial reports

2.3.5 CONTRACT TERMS/CLAUSES

The contract resulting from this RFP will contain both mandatory and non-mandatory clauses. Mandatory clauses are non-negotiable while non-mandatory clauses are highly desirable. appendix A contains a sample contract that will be similar to the one resulting from this RFP. Please indicate your acceptance of the following mandatory/non-mandatory clauses within the sample contract. If a non-mandatory clause is not acceptable as worded, please indicate in the "Additional Contract Considerations" and suggest a specific alternative wording to address issues raised by the specific clause in the explanation space provided.
To reiterate, it's the Board's strong desire to not deviate from the contract provided in the appendix and as such the Board reserves the right to reject any and all of these requested changes. Failure to include a clear, specific, unequivocal agreement to these clauses may result in disqualification of the proposal from further evaluation.

Mandatory Clauses
Duties of Contractor, Rate of Pay, and Term of Contract
Authority to Bind Contractor
Compliance with Laws
Drug-free Workplace Provision and Certification
Employment Eligibility Verification
Funding Cancellation
Governing Laws
Indemnification
Information Technology

Non-discrimination Clause
Ownership of Documents and Materials
Payments
Penalties/Interest/Attorney's Fees
Termination for Convenience
Non-collusion and Acceptance

Additional Contract Considerations **Please note: The Board will only review or negotiate changes to contract clauses clearly identified in the transmittal letter. If there are no contract clauses identified, Respondent is considered to have accepted**

2.3.6 REFERENCES

The Respondent must include a list of at least three (3) clients for whom the Respondent has provided products and/or services that are the same or similar to those products and/or services requested in this RFP. Any state government for whom the Respondent has provided these products and services should be included; also to be included should be clients with locations near Alabama as site visits may be arranged. Information provided should include the name, address, and telephone number of the client facility and the name, title, and phone/fax numbers of a person who may be contacted for further information.

Reference One

Legal Name of Company or Governmental Entity
Industry of Company
Mailing Address
Telephone Number
Contact Name
Title
Telephone/Fax Number
E-mail Address
Time period in which services were provided
Please describe the service provided to this reference

Reference Two

Legal Name of Company or Governmental Entity
Industry of Company
Mailing Address
Telephone Number
Contact Name
Title
Telephone/Fax Number
E-mail Address
Time period in which services were provided
Please describe the service provided to this reference

Reference Three

Legal Name of Company or Governmental Entity
Industry of Company
Mailing Address
Telephone Number
Contact Name
Title
Telephone/Fax Number
E-mail Address
Time period in which services were provided

Please describe the service provided to this reference

Please identify all references for the past five (5) years for whom your company has provided the same or similar services as those requested in this RFP, but the contract was terminated for cause or for convenience.

Reference One

Legal Name of Company or Governmental Entity
Industry of Company
Mailing Address
Telephone Number
Contact Name
Title
Telephone/Fax Number
E-mail Address
Time period in which services were provided
Please describe the service provided to this reference
Provide reason(s) for loss or termination

Reference Two

Legal Name of Company or Governmental Entity
Industry of Company
Mailing Address
Telephone Number
Contact Name
Title
Telephone/Fax Number
E-mail Address
Time period in which services were provided
Please describe the service provided to this reference
Provide reason(s) for loss or termination

Reference Three

Legal Name of Company or Governmental Entity
Industry of Company
Mailing Address
Telephone Number
Contact Name
Title
Telephone/Fax Number
E-mail Address
Time period in which services were provided
Please describe the service provided to this reference
Provide reason(s) for loss or termination

Corporate Litigation

Does your company have any pending litigation regarding contract disputes?

2.3.7 REGISTRATION TO DO BUSINESS

Respondents providing the products and/or services required by this RFP must be registered and in good standing with the Alabama Secretary of State. The requirement is applicable to all limited liability partnerships, limited partnerships, corporations, S-corporations, nonprofit corporations, and limited liability companies. Please indicate the status of registration.

2.3.8 AUTHORIZING DOCUMENT

Respondent personnel signing the Transmittal Letter of the proposal must be legally authorized by the organization to commit the organization contractually. This section shall contain proof of such authority. A copy of corporate bylaws or a corporate resolution adopted by the board of directors indicating this authority will fulfill this

2.3.9 SUBCONTRACTORS

The Respondent is responsible for the performance of any obligations that may result from this RFP, and shall not be relieved by the non-performance of any subcontractor. Any Respondent's proposal must identify all subcontractors and describe the contractual relationship between the Respondent and each subcontractor. Either a copy of the executed subcontract or a letter of agreement over the official signature of the firms involved must accompany each proposal.

Any subcontracts entered into by the Respondent must be in compliance with all State statutes, and will be subject to the provisions thereof. For each portion of the proposed products or services to be provided by a subcontractor, the technical proposal must include the identification of the functions to be provided by the subcontractor and the subcontractor's related qualifications and experience.

The combined qualifications and experience of the Respondent and any or all subcontractors will be considered in the Board's evaluation. The Respondent must furnish information to the Board as to the amount of the subcontract, the qualifications of the subcontractor for guaranteeing performance, and any other data that may be required by the State. All subcontracts held by the Respondent must be made available upon request for inspection and examination by appropriate Board officials, and such relationships must meet with the approval of the Board.

The Respondent must furnish the following information for their use of subcontractors:

A. Each subcontractor's name, address, and state of incorporation that are proposed to be used in providing the required products and services

B. Each subcontractor's area(s) of responsibility under the proposal

C. The anticipated dollar amount for each subcontract

D. Each subcontractor's form of organization

E. An indication from each subcontractor of a willingness to carry out their responsibilities (this assurance in no way relieves the Respondent of any responsibilities in responding to this RFP or in completing the commitments documented in this proposal)

F. The qualifications of each subcontractor for guaranteeing performance

G. Identification of the functions to be provided by the subcontractor and the subcontractor's related qualifications and experience in the technical proposal for each portion of the proposed products or services to be provided by the subcontractor

H. Any other data that may be required by the State

2.3.10 GENERAL INFORMATION

Business Information

Legal Name of Company
Contact Name
Contact Title
Contact E-mail Address
Company Mailing Address
Company City, State, Zip
Company Telephone Number
Company Fax Number
Company Website Address
Number of Employees (company)
Years of Experience
Number of U.S. Offices
Year Alabama Office Established (if applicable)
Parent Company (if applicable)
Revenues ($MM, prior year)
Revenues ($MM, two-years prior)
% Of Revenue from Alabama customers

Does your company have a formal disaster recovery plan? If no, please provide an explanation of any alternative solution your company has to offer. If yes, please note and include as an appendix.

What is your company's technology and process for securing any Board or private information that is maintained by your company?

2.3.11 EXPERIENCE SERVING STATE GOVERNMENTS

Please provide a brief description of your company's experience in serving state governments and/or quasi-governmental accounts. Disclose each state or jurisdiction in which Respondent does business or holds contracts to provide goods or services and the nature of each such business or contract.

2.3.12 EXPERIENCE SERVING SIMILAR CLIENTS

Please describe your company's experience in serving clients of a similar size to the State that also had a similar scope. Please provide specific clients and detailed examples.

Respondent Name:

Enter your response below.

Enter your response below.

INdigital is an Indiana Corpora
Alabama (see appendix B-2).

The company is a diversified
Service Provider. Additionally

Enter your response below.

Information contained in this s
disclosure.

A balance sheet and an Incor

Enter your response below.

Information contained in this s
disclosure.

A statement of financial integ

Acceptance? (Yes / No)
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes

Yes
Yes
Yes
Yes
Yes
Yes

Enter your response below.

Enter your response below.

Indiana Statewide 911 Boar
state 911 agency
10 W Market Street, Suite 2
(317) 234-2507
Barry Ritter
Executive Director
(317) 234-2507
britter@in911.net
2005 - present
primary technology provide

Enter your response below.

Peninsula Fiber Network
911 System Service Provider
1901 West Ridge Street, Ma
(906) 226-2010
David McCartney
General Manager
(906) 226-2010
gm@pfnllc.net
2013 - current
provider of 911 call routing

Enter your response below.

Frontier Communications
telecommunications
805 Central Expressway So
469-913-5022
Vince Gitch
Product Manager - Public
469-913-5022
vince.gitch@ftr.com
2008 - current

provider of 911 call routing

Enter your response below.
not applicable

Enter your response below.
not applicable

Enter your response below.
not applicable

Enter your response below.
No

Registered? (Yes / No)
Yes

Enter your response below.
Mark Grady, President of INd INdigital (see appendix B-6) a

Enter your response below.

A. Ryan Public Safety Solu
12119 US Highway 431
Guntersville, AL 35976
B. RPSS will be responsibl
support, training and preventa
C. The dollar amount is not
ECDs. Calculations based or
D. RPSS is a privately held
E. RPSS will be pleased to
and maintenance for the entir
throughout the State. With a
of NENA and is proud to be o
F. Recognizing the need fo
formed in 2006. Beginning w
product and services to nearly
provided a very stable financi
G. Project Management – R
personnel will be used for this
order to provide superior serv
adhered to.

Training – RPSS has a s
ECDs with whatever interface
Installation and Maintenance–
maintenance services to supp
RPSS' reputation for quality a
of combined experience. Su
areas in the state if existing c
As a service organization, the
commitment to service, result
satisfaction surveys and custo
and are critically linked to ove

Enter your response below.

Communications Venture C
Mark Grady
President
mgrady@indigital.net
1616 Directors Row
Fort Wayne, IN 46808
(260) 469-2010
(260) 469-4329
www.indigital.net
52
19
2
n/a
n/a
$14 million
$13 million
0%

Yes / No

Yes, see appendix B-7

Enter your response below.

INdigital fully complies with al
security policy for employees.

Enter your response below.

Since 2005, INdigital has prov
INdigital maintains contracts v

Enter your response below.

INdigital has contracted with t
wireless 9-1-1 calls across the

INdigital
Please Complete Yellow Shaded Regions

. **Please indicate if appendixs are included.**

. **Please indicate if appendixs are included.**

ation (see appendix B-1). INdigital is also registered to conduct business in the state of

telecommunications provider. The company's primary focus is operating as a 911 System
. the company sells and maintains 911 call taking equipment, 911 call routing and ALI

. **Please indicate if appendixs are included.**

section is the property of INdigital and should be considered confidential and not for

ne Statement for completed fiscal years 2014 and 2015 are included in this response (see

. **Please indicate if appendixs are included.**

section is the property of INdigital and should be considered confidential and not for

rity has been included with this response (see appendix B-5).

If No, Explanation

. Please indicate if appendixs are included.

d

950, Indianapolis IN, 46204

er and system service provider for statewide delivery of wireless 911 calls direct to

rquette, MI 49855

technologies including ESRP, ECRF, Ali Database, text-FOR-911 and MEVO disaster

uth, Allen, TX 75013

technologies including ESRP, ECRF, Ali Database, text-FOR-911 and MEVO disaster

Please indicate if appendixs are included.

If No, Explanation

Please indicate if appendixs are included.

igital has signed the transmittal letter. Included in this response is a copy of the Bylaws of uthorizing the President to bind the company.

. **Please indicate if appendixs are included.**

tions, Inc.

e for project management and coordination with ECDs, all hardware installation, on-site
ative maintenance of the system.
t fixed at this time due to several unknowns regarding the exact number of participating
n a full deployment would approximately one million dollars for the duration of the contract
S Corporation
be a part of the ANGEN project by providing project management, installation, training
e project. Our staff of field engineers have hands-on experience in PSAP environments
strong commitment to the 9-1-1 community, RPSS is very active in the Alabama Chapter
ne of the sponsors of their annual conference.
r quality support services in the 9-1-1 emergency communications area, RPSS was
vith a customer base of approximately ten support contracts, RPSS has grown to provide
y 100 9-1-1 call centers and supporting over 340 positions. This continued growth has
al base; our overhead is low and the organization remains debt free.
RPSS provided limited project management on the previous phase of ANGEN and the same
s phase. RPSS is fully prepared to provide planning, direction, structure and controls in
ice and ensure all contract requirements and specifications for the project are strictly

staff of 2 people that are dedicated professional trainers which will be utilized for training the
s require training.
- As a service organization, RPSS offers a comprehensive portfolio of installation, and
port the communication investments of 9-1-1 call centers. These services are backed by
nd are supported by a highly trained and certified team that encompasses over 125 years
pport services are provided 24x7x365. RPSS is committed to adding personnel to critical
overage is not adequate.
satisfaction of our customers is vital to our success. RPSS has a top−down priority
ing in a complete understanding of customer needs and perceptions. Annual customer
omer−driven service initiatives are conducted as key components of our corporate goals
rall organization success.

.

Corporation d/b/a INdigital

If No, Explanation

. **Please indicate if appendixs are included.**

l known security requirements that are applicable to our work. The company has a written
All employees are pre-employment screened, and during employment are subject to

. **Please indicate if appendixs are included.**

vided a statewide 911 network to the Indiana Statewide 911 Board. Additionally, in Indiana,
with the Indiana Office of Technology and the Indiana State Police.

. **Please indicate if appendixs are included.**

he Indiana Statewide 911 Board to provide a Next Generation ESInet for delivery of
e state of Indiana since 2005.

STATE OF INDIANA
OFFICE OF THE SECRETARY OF STATE
CERTIFICATE OF EXISTENCE

To Whom These Presents Come, Greetings:

I, Connie Lawson, Secretary of State of Indiana, do hereby certify that I am, by virtue of the laws of the State of Indiana, the custodian of the corporate records, and proper official to execute this certificate.

I further certify that records of this office disclose that

COMMUNICATIONS VENTURE CORPORATION

duly filed the requisite documents to commence business activities under the laws of State of Indiana on June 16, 1995, and was in existence or authorized to transact business in the State of Indiana on February 24, 2016.

I further certify this For-Profit Domestic Corporation has filed its most recent report required by Indiana law with the Secretary of State, or is not yet required to file such report, and that no notice of withdrawal, dissolution or expiration has been filed or taken place.

In Witness Whereof, I have hereunto set my hand and affixed the seal of the State of Indiana, at the city of Indianapolis, this Twenty-Fourth Day of February, 2016.

Connie Lawson

Connie Lawson, Secretary of State

1995060812 / 2016022431987

John H. Merrill
Secretary of State

P.O. Box 5616
Montgomery, AL 36103-5616

STATE OF ALABAMA

I, John H. Merrill, Secretary of State of Alabama, having custody of the Great and Principal Seal of said State, do hereby certify that

the entity records on file in this office disclose that Communications Venture Corporation a Indiana entity, qualified in the State of Alabama on November 12, 2015. The Alabama Entity Identification number for this entity is 347-480. I further certify that the records do not disclose that said qualification has been revoked, cancelled or terminated.

In Testimony Whereof, I have hereunto set my hand and affixed the Great Seal of the State, at the Capitol, in the city of Montgomery, on this day.

2/24/2016

Date

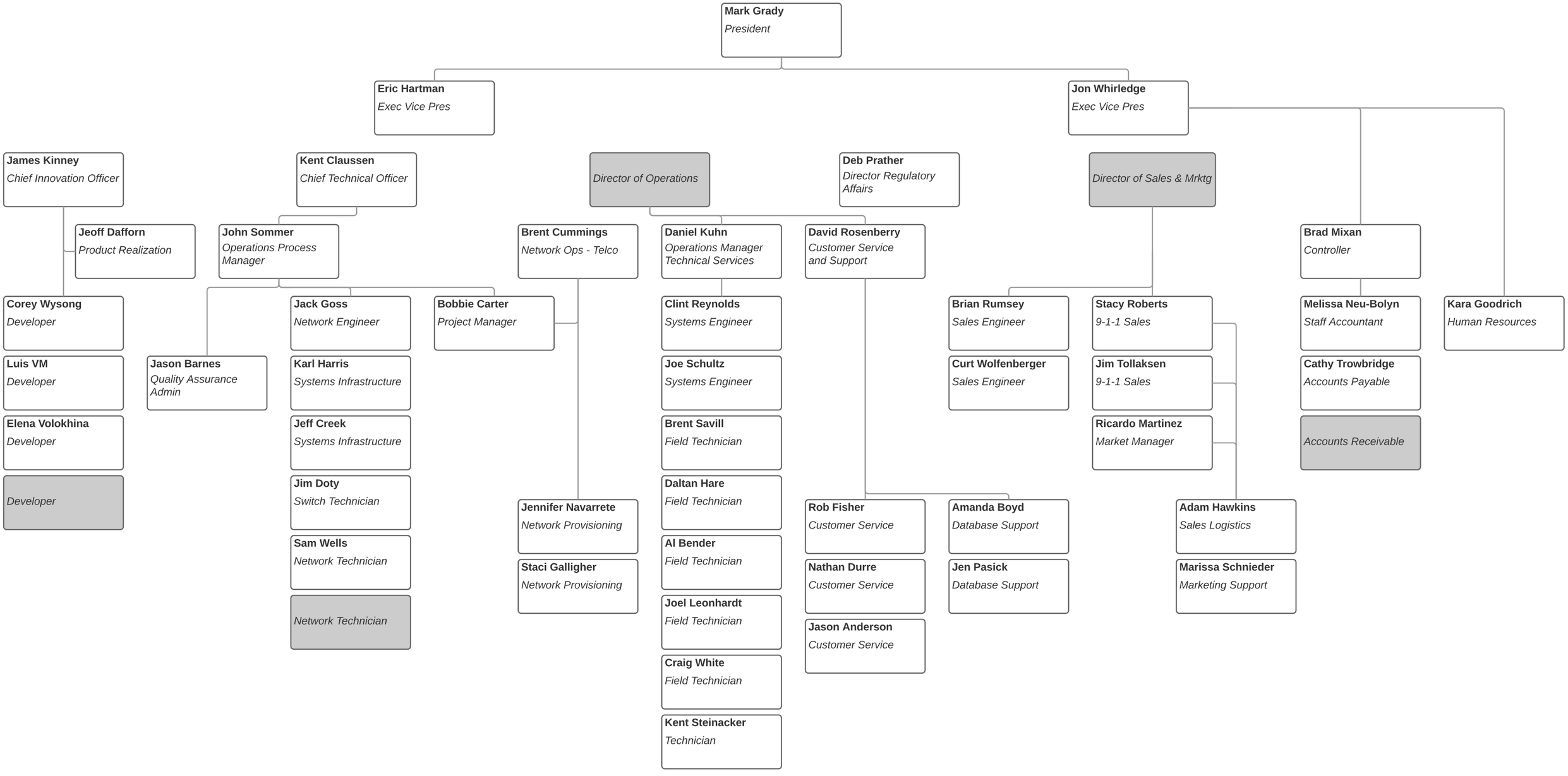
J. H. Merrill

John H. Merrill **Secretary of State**

20160224000003260

INDIGITAL ORG CHART

jon whirledge | February 24, 2016



Communications Venture Corporation
Balance Sheet
As of December 31, 2014 and 2013

Assets	2014	2013
Current Assets		
Cash & Cash Equivalents	$ 359,319.19	$ 938,424.93
Accounts Receivable, net of allowance of $133,253 and $114,326 for 2014 and 2013	1,505,403.93	1,118,027.11
Accounts Receivable - Venture Leasing	105,717.81	46,936.82
Inventory	206,710.78	154,515.00
Prepaid Expenses	283,025.05	139,536.72
Prepaid Income Taxes	62,765.55	343,781.00
Work in Process	279,342.89	585,467.95
Current Portion of Venture Leasing Note	44,320.77	42,875.45
Current Portion of LT Service Contracts	89,409.60	36,036.00
Current Deferred Tax Assets	116,941.00	52,314.00
Total Current Assets	3,052,956.57	3,457,914.98
Noncurrent Assets		
Patronage Capital	50,613.63	23,009.05
Long-Term Service Contracts	230,749.80	114,231.00
Note Receivable - Venture Leasing	412,803.78	457,124.55
Intangibles, net	13,000.00	-
Investment in Indiana Fiber Network	200,000.00	200,000.00
Total Noncurrent Assets	907,167.21	794,364.60
Telecommunications Plant		
Plant Under Construction	68,356.66	113,459.24
Telecommunications Plant in Service	6,900,953.01	8,441,507.55
Less: Accumulated Depreciation	(5,202,718.48)	(6,748,809.95)
Net Telecommunications Plant	1,766,591.19	1,806,156.84
Total Assets	$ 5,726,714.97	$ 6,058,436.42

See independent accountants' review report and notes to financial statements

Communications Venture Corporation
Balance Sheet
As of December 31, 2014 and 2013

Liabilities and Equity	2014	2013
Current Liabilities		
Accounts Payable - Trade	$ 564,714.94	$ 473,943.77
Accounts Payable - New Paris	34,685.46	19,456.16
Current Deferred Colocation Rent	6,654.60	6,654.60
Accrued Wages and Benefits	93,613.26	169,505.86
Unearned Revenue	1,005,683.84	802,247.49
Accrued Other Taxes	46,705.39	40,241.52
Line of Credit	200,000.00	650,000.00
Other Current Liabilities	40,628.83	46,251.92
Total Current Liabilities	1,992,686.32	2,208,301.32
Noncurrent Liabilities		
Long-Term Deferred Colocation Rent	2,772.75	9,427.35
Deferred State Tax Liability	19,705.00	23,226.00
Deferred Federal Tax Liability	504,215.00	501,143.00
Total Noncurrent Liabilities	526,692.75	533,796.35
Stockholders' Equity		
Capital Stock, $.10 par value 624,700 shares authorized, 493,550 shares outstanding in 2014 and 2013	49,355.00	49,355.00
Additional Paid-in-Capital	3,035,700.46	3,035,700.46
Retained Earnings	454,165.35	563,168.20
Syndication Costs	(331,884.91)	(331,884.91)
Total Stockholders' Equity	3,207,335.90	3,316,338.75
Total Liabilities & Equity	$ 5,726,714.97	$ 6,058,436.42

See independent accountants' review report and notes to financial statements

Communications Venture Corporation
Income Statement
For the Years Ended

	12/31/2014	12/31/2013
Operating Revenues		
Network Revenues	$ 2,955,763.10	$ 3,178,980.13
Routing Revenues	2,176,167.46	2,102,485.90
Non-Voice Revenue	640,162.03	75,692.00
Database Revenues	673,625.57	619,763.06
Managed Services Revenues	1,955,220.29	1,938,779.48
Maintenance Revenues	1,059,498.40	948,182.88
CPE Sales Revenue	1,217,641.40	820,022.80
CLEC Revenues	1,757,624.75	2,317,647.58
Total Operating Revenue	12,435,703.00	12,001,553.83
Operating Expenses		
Network Expense	3,655,299.45	3,468,001.04
General & Admin	418,336.04	445,420.59
Sales & Marketing	1,017,330.83	611,199.81
Corporate Operations Expense	1,159,878.44	1,146,866.59
Cost of Services	1,483,708.29	1,015,755.03
CPE Sales Expense	1,057,620.12	1,097,916.92
Research & Development	737,939.89	608,266.42
Depreciation Expense	711,408.30	654,445.37
CLEC Services	662,287.31	859,730.18
CLEC Network	1,322,308.46	1,565,096.68
Total Operating Expenses	12,226,117.13	11,472,698.63
Pretax Operating Income	209,585.87	528,855.20
Operating Taxes		
Federal Income Taxes	(1,658.00)	118,369.34
State Income Taxes	(16,946.00)	(1,100.74)
Other Operating Taxes	57,419.39	65,166.89
Total Operating Taxes	38,815.39	182,435.49
Net Operating Income	170,770.48	346,419.71
Non-Operating Income		
Interest & Dividends Income	26,574.09	41,914.06
Interest Expense	(6,722.72)	(11,669.72)
Gain on Sale of Assets	11,159.30	10,505.68
Non-operating Income Tax Expense	(10,784.00)	(15,939.00)
Total Non-Operating Income	20,226.67	24,811.02
Net Income (Loss)	$ 190,997.15	$ 371,230.73

See independent accountants' review report and notes to financial statements

Statement Integrity and Reliability of Financial Data

The management of Communications Venture Corporation is responsible for the integrity of the financial data reported, including any estimates and judgments necessary in their preparation. In fulfilling this responsibility, the accompanying financial statements and related notes were prepared by management.

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the USA, and for designing, implementing, and maintaining internal control relevant to the preparation and fair presentation of the financial statements.

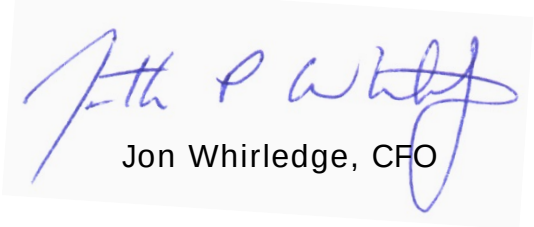
In order to provide reliable accounting records and reasonable safeguards of assets, the Company maintains several systems of internal accounting control. This is accomplished by the development and communication of accounting policies and procedures to staff members involved in financial matters.

Kehlenbrink, Lawrence and Pauckner, LLC (KLP) serve as independent certified public accountants, have been engaged to prepare a reviewed report of the company's financial statements based on an examination in accordance with Statements on Standards for Accounting and Review Services issued by the American Institute of Certified Public Accountants. Their report on this examination follows the report.

Although the shareholders of the corporation have not formed an audit committee, we encourage them to meet with KLP to discuss reporting objectives, plans and results, as well as discuss management's action taken in discharging its responsibilities for accounting, financial reporting and internal accounting control systems.

To insure independence, KLP also have the opportunity to meet with the shareholders without the presence of management, and at any other time the Executive Committee deem necessary during the year.

Mark Grady, President



Jon Whirledge, CFO

prepared by: B Cummings; J Goss; J Doty

- background, continued from related e-mail -

work assignment:

This plan will list the disaster recovery plan in two ways:

1). An 'above the line' scenario and the associated assumptions - those solutions that are highly acceptable, and the assumptions that were considered that put them into this category.

2). A set of 'below the line' scenarios and the associated assumptions - those that are *not* highly acceptable but possible, and the assumptions that were considered that put them in this category.

objective: identify as many alternatives as possible

work deadline: close of business Wednesday

format: this g.doc

considerations: I have listed some of the catastrophic events that will require recovery plans. There may be others. Add them in the appropriate section. I would use the two column table format I have started for the proposed recovery plans that you develop.

This planning exercise is identical to the planning that is in the CLFE test protocol and policy sheet, where the expected failures are listed.

This page will be deleted from our submission, and is for internal use only.

This plan is confidential and proprietary to INdigital telecom, and is not for release outside our company without officer level approval and recorded notice of the release.

master document TOC

Attachment C 4.10 Disaster Recovery / Business Continuity

Respondents must include a disaster recovery capability within the proposed solution to offer continuity of operations in the event of a malfunction of the network, system or i3 components. (there is no requirement for a narrative response in this section).

Attachment C - 2.3.10 - Does your company have a formal disaster recovery plan? If no, please provide an explanation of any alternative solution your company has to offer. If yes, please note and include as an attachment. [This g.doc is the attachment]

Background:

This planning document sets out the scenarios which are known. There are known failure conditions, as well as unknown unknowns (things about which we are clueless). See http://goo.gl/ioQzAM or in video form: http://goo.gl/vNOg9r.

For the purposes of this document, we are setting out INdigital's planned responses for the following known catastrophic event scenarios.

Scenario 1 - Indianapolis Henry St co-lo catastrophic failure - causes: earthquake, fire, tornado, explosion, extended power outage, etc.

NOTE: the only equipment present at Henry St. Colo is 1- Cisco Backbone router.

Disaster condition assumptions:

A). Loss of all colo equipment, transport and functions.

B). All NE's and FE's are inoperable

C). All contracted providers and services are affected

above the line recovery	*below the line recovery*
IP Network traffic will be directed to alternate NE's and FE's.	The IN911 network elements connecting to Henry Street will operate in simplex mode until a new node can be put online.
Additional NE's and FE's will be added at a new site where connectivity exists and IP routing is under INdigital's control.	New connection arrangements will be established from a mutual aid company (such as CBT or NPT) to ensure service continuity.

above the line assumptions:

This plan is confidential and proprietary to INdigital telecom, and is not for release outside our company without officer level approval and recorded notice of the release.

1. OSP's have network control and connectivity.
2. The IN911 network has adequate capacity at the remaining service nodes.
3. An alternate site is readily available, with IP connectivity.

below the line assumptions:

4. Extended operation in simplex mode is the only available option.
5. Connection arrangements are no longer available for the location of the destroyed node in a reasonable period of time.

Scenario 2 - Indianapolis 76th St catastrophic failure - causes: earthquake, fire, tornado, explosion, extended power outage, etc.

Disaster condition assumptions:

A). Loss of all colo equipment, transport and functions.

B). All NE's and FE's are inoperable

C). All contracted providers and all services are affected

above the line recovery	below the line recovery
all OSP's will failover and/or rehome traffic to the remaining operational NE's and FE's.	The IN911 network will operate in simplex mode until a new node can be put online.
Additional NE's and FE's will be added at a new site where connectivity exists and IP routing is under INdigital's control.	New connection arrangements will be established from a mutual aid company (such as CBT or NPT) to ensure service continuity
Deploy 4G LTE disaster recover router kits as needed for IP connectivity (CR or PR), divert traffic to a MEVO connection point.	A previous generation of equipment can be inventoried for deployment as part of the DR plan.
Offer carriers the 8xx PSTN failover trunking to ensure voice payload delivery.	A dedicated 'dim' DR site will be established with existing spare SS7 gateway installed. DR will consist of making it a 'lit' site that can be put online with DPC and IP re-homes.
Use existing hardware for TDM circuit emulation.	Existing connection arrangements will be rehomed to a new site where feasible.

above the line assumptions:

1. OSP's have network control and connectivity.
2. The IN911 network has adequate capacity at the remaining service nodes.

This plan is confidential and proprietary to INdigital telecom, and is not for release outside our company without officer level approval and recorded notice of the release.

3. An alternate site is readily available, with IP connectivity.
4. VM hardware was readily available to INdigital.

below the line assumptions:

5. Extended operation in simplex mode is the only available option.
6. Connection arrangements are no longer available for the location of the destroyed node in a reasonable period of time.
7. Some OSP network connectivity currently exists making a rehome possible.
8. The previous generation of equipment may not support updated FE's or software packs in current production.
9. The cost to have a staged 'dim' site is not financially possible.

Scenario 3 - McCordsville catastrophic failure - causes: earthquake, fire, tornado, explosion

Disaster condition assumptions:

A). Loss of all colo equipment, transport and functions.

B). All NE's and FE's are inoperable

C). All contracted providers and services are affected

above the line recovery	below the line recovery
all OSP's will failover and/or rehome traffic to the remaining operational NE's and FE's.	Portions of the IN911 network will operate in simplex mode until a new node can be put online.
Additional NE's and FE's will be added at a new site where connectivity exists and IP routing is under INdigital's control.	New connection arrangements will be established from a mutual aid company (such as CBT or NPT) to ensure service continuity
Deploy 4G LTE disaster recover router kits as needed for IP connectivity (CR or PR). Or Mevo connection point.	A previous generation of equipment can be inventoried for deployment as part of the DR plan.
Offer carriers the 8xx PSTN failover trunking to ensure voice payload delivery.	A dedicated 'dim' DR site will be established with existing spare SS7 gateway installed. DR will consist of making it a 'lit' site that can be put online with DPC and IP re-homes.
Use existing hardware for TDM circuit emulation.	Existing connection arrangements will be rehomed to a new site where feasible.

This plan is confidential and proprietary to INdigital telecom, and is not for release outside our company without officer level approval and recorded notice of the release.

above the line assumptions:

1. OSP's have network control and connectivity.
2. The IN911 network has adequate capacity at the remaining service nodes.
3. An alternate site is readily available, with IP connectivity.
4. VM hardware was readily available to INdigital.

below the line assumptions:

5. Extended operation in simplex mode is the only available option.
6. Connection arrangements are no longer available for the location of the destroyed node in a reasonable period of time.
7. Some OSP network connectivity currently exists making a rehome possible.
8. The previous generation of equipment may not support updated FE's or software packs in current production.
9. The cost to have a staged 'dim' site is not financially possible.

Scenario 4 - Fort Wayne FTWYINTK catastrophic failure - causes: earthquake, fire, tornado, explosion

Disaster condition assumptions:

A). Loss of all equipment, transport and functions.

B). All NE's and FE's are inoperable

C). All contracted providers and services are affected

above the line recovery	below the line recovery
all OSP's will failover and/or rehome traffic to the remaining operational NE's and FE's.	Portions of the IN911 network will operate in simplex mode until a new node can be put online.
Additional NE's and FE's will be added at a new site where connectivity exists and IP routing is under INdigital's control.	New connection arrangements will be established from a mutual aid company (such as CBT or NPT) to ensure service continuity
Deploy 4G LTE disaster recover router kits as needed for IP connectivity (CR or PR). Or Mevo connection point.	A previous generation of equipment can be inventoried for deployment as part of the DR plan.

This plan is confidential and proprietary to INdigital telecom, and is not for release outside our company without officer level approval and recorded notice of the release.

Offer carriers the 8xx PSTN failover trunking to ensure voice payload delivery.	A dedicated 'dim' DR site will be established with SS7 gateway backups installed. DR will consist of making it a 'lit' site that can be put online with DPC and IP re-homes.
Use existing hardware for TDM circuit emulation.	Existing connection arrangements will be rehomed to a new site where feasible.

above the line assumptions:

1. OSP's have network control and connectivity.
2. The IN911 network has adequate capacity at the remaining service nodes.
3. An alternate site is readily available, with IP connectivity.
4. VM hardware was readily available to INdigital.

below the line assumptions:

5. Extended operation in simplex mode is the only available option.
6. Connection arrangements are no longer available for the location of the destroyed node in a reasonable period of time.
7. Some OSP network connectivity currently exists making a rehome possible.
8. The previous generation of equipment may not support updated FE's or software packs in current production.
9. The cost to have a staged 'dim' site is not financially possible.

Scenario 5 - New Paris NWPRINXA catastrophic failure - causes: earthquake, fire, tornado, explosion

Disaster condition assumptions:

A). Loss of all colo equipment, transport and functions.

B). All NE's and FE's are inoperable

C). All contracted providers and services are affected

above the line recovery	below the line recovery
all OSP's will failover and/or rehome traffic to the remaining operational NE's and FE's.	Switches will operate in simplex SS7 mode until A-Links can be rehomed.

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Additional NE's and FE's will be added at a new site where connectivity exists and IP routing is under INdigital's control.	Existing connection arrangements will be rehomed to a new site where feasible.

above the line assumptions:

1. OSP's have network control and connectivity.
2. The IN911 network has adequate capacity at the remaining service nodes.
3. An alternate site is readily available, with IP connectivity.

below the line assumptions:

4. Extended operation in simplex mode is the only available option.
5. Connection arrangements are no longer available for the location of the destroyed node in a reasonable period of time.
6. Some OSP network connectivity currently exists making a rehome possible.

Scenario 6 - A core set of FE's at a location has a catastrophic failure (ie: dual CR failure) - causes: earthquake, fire, tornado, explosion, hardware failure

Disaster condition assumptions:

A). Loss of all NE functions.

B). All NE / FE services provided by the node are affected

C). Building, power and network connections are still available.

above the line recovery	below the line recovery
all OSP's will failover and/or rehome traffic to the remaining operational NE's and FE's.	Portions of the IN911 network will operate in simplex mode until a new node can be put online.
Network technicians will be dispatched to install network spares.	

above the line assumptions:

1. OSP's have network control and connectivity.
2. The IN911 network has adequate capacity at the remaining service nodes.
3. Network connections can be reestablished at the current site.

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below the line assumptions:

4. Extended operation in simplex mode is the only available option.

Scenario 7 - ATT SR failure: - causes: earthquake, fire, tornado, explosion, hardware failure.

Disaster condition assumptions:

A). 1 or more AT&T selective routers have catastrophic failure.

B). All IN911 NE's and FE's are operational.

C). Part of the IN911 network is operational.

above the line recovery	below the line recovery
All 9-1-1 calls for service will fail over to administrative numbers.	Contact AT&T for specific instructions on alternate call routing strategy.
	Overflow calls to alternate PSAPs to ensure voice and ALi data payload delivery
	Route calls to PSAP cell phones to ensure voice payload delivery

above the line assumptions:

1. AT&T PSAP has PSTN connectivity.

below the line assumptions:

2. AT&T county level alternate routes are available.
3. Confusion and bad info to the media can be mitigated.

Scenario 8 - Core fiber ring catastrophic failure / segment isolation. causes: earthquake, fire, tornado, explosion, hardware failure, human error.

Disaster condition assumptions:

a). Loss of connectivity to affected FE's and NE's.

b). All affected NE's and FE's are available.

c). All contracted providers and services are affected

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above the line recovery	below the line recovery
Network traffic will fail over to Tertiary routes where available. Traffic will roll to administrative numbers in some cases.	Unaffected portions of the IN911 network will continue to operate. Some portions will operate in simplex mode.
Deploy 4G LTE disaster recover router kits as needed for IP connectivity (CR or PR). Or Mevo connection point.	New connection arrangements will be established from a mutual aid company (such as CBT or NPT) to ensure service continuity

above the line assumptions:

1. Tertiary routes (public Internet VPN) are available.
2. 4G LTE wireless network is available.

below the line assumptions:

3. Extended operation in simplex mode is the only available option.
4. Connection arrangements are no longer available for the location of the destroyed node in a reasonable period of time.

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This plan is confidential and proprietary to INdigital telecom, and is not for release outside our company without officer level approval and recorded notice of the release.

State of A
ALABAMA 911 Board A

AL-NG911-RFP-16-001
Attachment C – Cost Proposal
Table of Contents

Note to Respondents: All pricing being sought under this RFP will be utilized to understand and evaluate your proposal.

AL-NG911-RFP-16-001
Attachment C – Cost Proposal
Instructions

Overview

Each respondent must complete the cost worksheets that follow, using the format as provided. Please see the specific completion instructions included on each individual tab.

Respondents are encouraged to indicate if they are unable to provide specific products or services as the best and final offer process will define/refine the specific products and services required from the selected respondent.

Each respondent should document any and all assumptions used for arriving at cost estimates in the following sections.

The Cost Proposal categorizes unit pricing into two main groups: Implementation *(One time price)* and Recurring *(Monthly price)* . The Cost Proposal contains two sections. Section 1 is used for the functional components to implement and operate the 9-1-1 network and Sections 2-6 are specifically for hosted 9-1-1 services and operation.

The Cost Model is calculated from the Cost Proposal elements. Respondents do not need to develop a separate cost model.

Sample numbers have been placed into both the Cost Proposal spreadsheet as an illustration of how the spreadsheets work.

Respondents are expected to replace the sample numbers and modify the timeline to represent its proposal. These figures are not indicative of a possible budget.

RESPONDENTS ARE ADVISED THAT ALL ASSUMPTIONS MADE IN THE COST PROPOSAL AND ELSEWHERE IN THIS RFP REGARDING QUANTITIES (INCLUDING THE NUMBER OF PSAPS) ARE ESTIMATES ONLY,

SUCH QUANTITIES MAY INCREASE OR DECREASE. THE AGREEMENT IS FOR UNIT PRICES ONLY; AND WHERE APPLICABLE A MONTHLY RECURRING CHARGE FOR ONGOING OPERATIONS AND ADMINISTRATION.

OFFERORS, BY SUBMITTING THIS COST PROPOSAL, CERTIFY THAT THEY HAVE MADE A GOOD FAITH EFFORT TO ALLOCATE COSTS TO APPROPRIATE SERVICE CATEGORIES AND HAVE NOT ENGAGED IN UNBALANCED BIDDING OF ANY KIND.

Note to Respondents: All pricing being sought under this RFP will be utilized to understand and evaluate your proposal. All pricing included in these schedules will be on a firm, fixed monthly recurring cost basis for the transfer, implementation, and on-going operations of the system.

AL-NG911-RFP-16-001
Attachment C – Cost Proposal
Instructions - Schedule 1

COST PROPOSAL:

This RFP calls for unit pricing by Deliverable / Cost Area. Respondent will insert its unit prices into th

Implementation Pricing: Includes the Non-Recurring and one time charges for purchasing the equipm

Recurring (Monthly) Pricing: Includes monthly Administration and Operations of the system, and Proj

The Project Management charge shall encompass all costs associated with implementation of the sy
PSAP. Enter your recurring monthly charge for each of the following items:

AL-NG911-RFP ESInet Requirements

AL-NG911-RFP Specific Requirements

AL-NG911-RFP i3/NG Core Services Requirements

System Reporting and i3 Logging Requirements

Service and Support Requirements

Project Management and Planning Requirements

Electrical, Wiring and Cable Requirements

Other Required Items Charges - for items that the Vendor believes are needed but do not fit into one
Please itemize any Other Required Items (add rows to spreadsheet if necessary)
At the bottom of the Cost Proposal spreadsheet please be sure to check and total all the monthly rec
An additional table is provided for System Hosting.
Please provide a monthly recurring cost for each of the two optional items.

Cost Proposal Column	

Deliverable / Cost Area	The Deliver to deliver 9 component Responden table includ so that a de
Estimated one time (Non- Recurring - NRC) start up costs, capitol costs etc.	The first thr
Unit of Measure	Unit of mea cost. This It is the res costs
Estimated Cost	Estimated
Extended Price (Unit of Measure x Estimated Cost)	The Extend
Ongoing Monthly Recurring Charges (MRC)	Ongoing M the system
Unit of Measure	Unit of mea cost. Ongoi It is the res costs
Unit Price	Unit price is
Extended Price (Unit of Measure x Unit Price)	Extended P

e Cost Proposal spreadsheet. The columnar structure shall not be changed.

ıent and facilities designed to provide the service functionality.

ect Management charges for the duration of the projected implementation period.

ystem and is the only allowable charge prior to acceptance of the ESInet and first

of the specified charge categories.

urring charges.

Instructions

rable / Cost Area has been pre-populated with the anticipated components required
11 service to the Alabama PSAP's. Each of these components relates to an existing
or desired functionality.

nts shall use the list as a guide to prepare unit costs for each functional element. The
les a set of instructions to help guide how pricing information is entered into the table
etailed cost can be generated.

ree columns are used to enter Non-Recurring charges.

asure is a figure used to calculate a total Non-Recurring charge based upon a Unit
may be a Primary PSAP ; one time implementation milestones;

pondents responsibility to articulate what measure they are using to calculate their

Cost is the cost of an individual component or system level functionality.
led price is a summation of the Unit of Measure multiplied by Estimated Cost.
onthly Recurring Charges are the monthly service fees billed to the AL911 Board by
service provider.

asure is a figure used to calculate a total Non-Recurring charge based upon a Unit
ing operational costs are expressed in terms of months, days or hours.

pondents responsibility to articulate what measure they are using to calculate their

s the monthly charge of a service function provided by the system service provider.
Price (Unit of Measure x Unit Price)

AL-NG911-RFP-16-001
Attachment C – Cost Proposal
Schedule 1 – Equipment and Implementation

This table indicates the pricing elements identified for requirements defined in AL-NG911 RFP ATTACHMENT D - Technical Specifications, for costs associated with the transfer, modification and implementation of the system (from date of contract execution to the end of the month statewide roll-out is completed). The successful Respondent is to group tasks/deliverables by the areas identified.

Instructions: Please fill in the cells shaded yellow. These items will be used to assign Cost components. Do not fill in the gray and blue cells. Note that the blue cells will populate automatically. Price example - ESInet configured at 8 PSAP's for a total of 80,0000. 8 is entered in the unit of measure, $10,000 entered in the estimated cost

	Estimated one time (Nonrecurring - NRC) start up costs, capitol costs etc.			Ongoing monthly recurring c	
Deliverable / Cost Area	**Unit of Measure**	**Estimated Cost**	**Extended Price (Unit of Measure x Estimated Cost)**	**Unit of Measure**	**Unit Price**
Section 2 - ANGEN ESInet Requirements					
2.2 ANGEN ESInet Services		$ -	$ -		$ -
ESInet Deployment		$ -	$ -		$ -
PSAP IP Mesh Transport Network	252	$ 3,000.00	$ 756,000.00	252	$ 1,278.00
IP Core Router Architecture (aggregation service routers)	42	$ 1,000.00	$ 42,000.00	42	$ 2,000.00
Fiber to the PSAP (high availability option)		$ -	$ -		$ -
Commodity IP (tertiary service provider connections)	120	$ 500.00	$ 60,000.00	120	$ 500.00
Regulatory and Legislative Support		$ -	$ -		$ -
2.3 ANGEN Architecture Requirements		$ -	$ -		$ -
2.4 ANGEN ESInet Features and Functions		$ -	$ -		$ -
2.5 ANGEN Network Failover		$ -	$ -		$ -
2.6 ANGEN Network Security		$ -	$ -		$ -
Sub-Total			**$ 858,000.00**		
Section 3 - ANGEN Specific Requirements					
3.1 System Service Provider Coordination Requirements		$ -	$ -		$ -
Legacy T-1 Network Transport (OSP to tandems)		$ -	$ -		$ -
Originating Service Provider Coordination (wireless carrier)		$ -	$ -		$ -
Orginating Service Provider Coordination (x-LEC)		$ -	$ -		$ -
Voice Message Services		$ -	$ -		$ -
Database Server and Software		$ -	$ -		$ -
pANI (psuedo ANI) and IP Provider ALI Records		$ -	$ -		$ -
Third Party Providers Interfaces (TCS and Intrado E2+ interfaces)		$ -	$ -		$ -
Inter-company ALI Server Connections		$ -	$ -		$ -
3.2 Interstate Interconnection Requirements		$ -	$ -		$ -
3.3 Text to 911 Requirements		$ -	$ -	480	$ 65.00
Originating Service Provider coordination (wireless carrier)		$ -	$ -		$ -
Sub-Total			**$ -**		
Section 4 - ANGEN i3 / NG Core Services Requirements					
4.1 NENA i3 Core Functional Requirements		$ -	$ -		$ -
SIP Gateway		$ -	$ -		$ -
SS7 Legacy Gateways	75	$ 270.00	$ 20,250.00	75	$ 250.00
ALI Interface		$ -	$ -		$ -
IP Call Routing Platform	2	$ 630,847.00	$ 1,261,694.00	480	$ 285.00
4.2 Border Control Function (BCF)		$ -	$ -		$ -
4.3 Emergency Call Routing Function (ECRF)	1	$ 100,000.00	$ 100,000.00	480	$ 96.00
4.4 Emergency Services Routing Proxy (ESRP)		$ -	$ -		$ -
4.5 Legacy Network Gateway (LNG)		$ -	$ -		$ -
4.6 Legacy PSAP Gateway (LPG)	236	$ 2,450.00	$ 578,200.00		$ -
4.7 Legacy Selective Router Gateway (LSRG)* if included		$ -	$ -		$ -
4.8 Location Validation Function (LVF)		$ -	$ -		$ -
4.9 Legacy Database Services	1	$ 100,000.00	$ 100,000.00	480	$ 45.00
4.10 Disaster Recovery / Business Continuity		$ -	$ -	236	$ 85.00
Continuity of Operations (Resiliency)		$ -	$ -		$ -
Sub-Total			**$ 2,060,144.00**		
Section 5 - System Reporting and i3 Logging Requirements					
5.1 Reporting and Data Collection System Requirements	1	$ 1,217,767.00	$ 1,217,767.00	1	$ 59,575.00
Remote Diagnostics		$ -	$ -		$ -
Performance Monitoring		$ -	$ -		$ -
Notification and Escalation		$ -	$ -		$ -
5.2 Statewide Statistical Monitoring		$ -	$ -		$ -
5.3 Operational Reporting and Logging		$ -	$ -		$ -
Logging Recording		$ -	$ -		$ -
System Reporting and Logging Requirements		$ -	$ -		$ -
5.4 Local Logging Recorder Interface		$ -	$ -		$ -
Sub-Total			**$ 1,217,767.00**		
Section 6 - Service / Support Requirements					
6.1 Customer Support Services		$ -	$ -		$ -
Network Operation, Administration and Management		$ -	$ -		$ -
PSAP Alerting and Remote System Status Alarming		$ -	$ -		$ -
Quality of Service (QoS) Monitoring and Reporting		$ -	$ -		$ -
Service Level Agreement (SLA) Monitoring and Reporting		$ -	$ -		$ -
Ongoing Development of New Public Safety Services		$ -	$ -		$ -
Spares		$ -	$ -		$ -
6.2 Help Desk		$ -	$ -	118	$ 430.00
6.3 Trouble Handling and Ticketing Requirements		$ -	$ -		$ -
6.4 Training		$ -	$ -		$ -
6.5 Monitoring of Applications and Equipment		$ -	$ -		$ -
Intrusion Prevention and Detection		$ -	$ -		$ -
Identity and Access Management		$ -	$ -		$ -
6.6 Network Operations Center (NOC)		$ -	$ -	118	$ 215.00
6.7 Alarm Categories		$ -	$ -		$ -
6.8 Scheduled Maintenance		$ -	$ -		$ -
Sub-Total			**$ -**		
Section 7 - Project Management and Planning Requirements					
7.1 Implementation Project Plan		$ -	$ -		$ -
Implementation Oversight		$ -	$ -		$ -
Cutover Planning		$ -	$ -		$ -
Migration Plan		$ -	$ -		$ -
7.2 System Test Plan		$ -	$ -		$ -
7.3 Transition Plan		$ -	$ -		$ -
7.4 Service Management Plan		$ -	$ -		$ -
Sub-Total			**$ -**		
Section 8 - Electrical, Wiring, and Cable Requirements					
8.1 Electrical		$ -	$ -		$ -
8.2 Electrical Interference		$ -	$ -		$ -
8.3 Wiring and Cabling		$ -	$ -		$ -
8.4 Grounding		$ -	$ -		$ -
8.5 Transient Voltage Surge Suppression		$ -	$ -		$ -
Sub-Total			**$ -**		
Total Transfer and Implementation Cost			**$ 4,135,911.00**		

Assumptions and Comments

Please see included Attachment C-1 - Cost Proposal Narrative and Attachment C-2 - Cost Proposal Assumptions, Conditions and Constraints.

AL-NG911-RFP-16-001
Attachment C – Cost Proposal
Instructions - Schedule 2-6 System Operation

Schedules 2 and 6 – System Hosting	
Schedule 2 On-going System Hosting Post Implementation from completion of statewide rollout Year 1	The Respondent(s) sh shaded area. The she
On-going System Hosting Post Implementation: Year 2	Same instructions as a
On-going System Hosting Post Implementation: Year 3	Same instructions as a
On-going System Hosting Post Implementation: Year 4	Same instructions as a
On-going System Hosting Post Implementation: Year 5	Same instructions as a
On-going System Hosting Post Implementation: Year 6 (Optional Extension)	Same instructions as a
On-going System Hosting Post Implementation: Year 7 (Optional Extension)	Same instructions as a
On-going System Hosting Post Implementation: Year 8 (Optional Extension)	Same instructions as a
On-going System Hosting Post Implementation: Year 9 (Optional Extension)	Same instructions as a
On-going System Hosting Post Implementation: Year 10 (Optional Extension)	Same instructions as a

Instructions
ıall enter an annual price for the hosted services in the yellow ɛet will calculate the extended price.
above
above
above
above
above
above
above
above
above

AL-NG911-RFP-16-001
Attachment C – Cost Proposal
Schedules 2 - 6 – Service Operation

These schedules indicate the pricing for Respondents proposed services as defined in Attachment D for the ongoing hosting of the system starting the first full month after statewide roll-out is complete to the period ending five (5) years from contract execution and then for each of the five (5) annual renewal options.

Instructions: Please fill in the cells shaded yellow. These items will be used to assign Cost points. Do not fill in the gray and blue cells. Note that the blue cells will populate automatically. Example - Annual price of hosting service is $120,000 multiplied by 12 months - $1,440,000 total

Cost element	Annual price	Months	Total
Schedule 2 On-going System Hosting Post Implementation from completion of statewide rollout to the period ending Year 1		4	$ -
On-going System Hosting Post Implementation: Year 2		12	$ -
On-going System Hosting Post Implementation: Year 3		12	$ -
On-going System Hosting Post Implementation: Year 4		12	$ -
On-going System Hosting Post Implementation: Year 5		12	$ -
On-going System Hosting Post Implementation: Year 6 (Optional Extension)		12	$ -

Appendix C-1 - Cost Proposal Narrative

Section 2 - ANGEN ESInet Requirements

2.2 ANGEN ESInet Services

PSAP IP Mesh Transport Network -

Is the ESiNet that connects the PSAPs throughout the state. The ESiNet proposed includes, at a minimum, dual facilities to each PSAP connected to the network and includes facilities to connect to adjacent states (Florida, Georgia, Mississippi, and Tennessee) for transfer and interoperability to serve nomadic users between state jurisdictions.

Commodity IP (tertiary service provider networks) -

Commodity IP is proposed to be used throughout the ANGEN as tertiary links. Tertiary links allow for the ANGEN network to grow in capacity and bandwidth, while using best of breed providers in each community throughout Alabama. These types of providers include local fiber, metro-ethernet, business class cable, DSL, and other emerging services adequate to support ANGEN systems.

Section 3 - ANGEN Specific Requirements

3.3 Text to 911 Requirements -

Is the ability to receive text messages from the general public to the PSAP. INdigital has TCCs providing service to PSAPs in 10 states. This service is provided through an easy to use common system user interface. This allows the PSAP to use one system and support call carriers providing text-to-911 services today.

Section 4 - ANGEN i3 / NG Core Services Requirements

4.1 NENA i3 Core Functional Requirements

SS7 Legacy Gateways -

Is the primary interconnection interface to ANGEN. SS7 gateways provide the best digital service connection between legacy service providers and ANGEN. Digital services provide significant enhancements to previous 911 technologies, allowing for faster call setup and delivery compared to legacy analog systems.

IP Call routing platform -

SIP:ME is the product name for INdigital's core call/text service routing elements. Subfunctions of SIP:ME include ESRP, MSRP, TAS, LIS, LVF, and LoST. Detailed technical descriptions of these elements are provided in the technical response.

4.3 Emergency Call Routing Function (ECRF) -

INdigital is proposing ECRF to assist with the deployment of policy routing, Text TCC services, and other next generation services. During the transitional phases of the project we will also provide ERDB (emergency routing database services) when operating in a legacy environment.
We are assuming each PSAP will provide GIS datasets. Additional GIS services are available but not quoted in this response.

4.6 Legacy PSAP Gateway (LPG) -

INdigital is proposing to provide LPG using redundant Cisco routers at the PSAP. The routers are multi-service routers, they will terminate ANGEN and also provide LPG services for PSAPs that require it. In addition to these core functions the LPG will also be involved in conference and transfer functions for PSAPs utilizing legacy 911 equipment.

4.9 Legacy Database Services -

INdigital is proposing legacy ALI services to support the delivery and ongoing management of wireless call data. Legacy ALI connectivity will be delivered by industry standard interfaces. The system is capable to grow into managing wireline ALI and MSAG as well.

4.10 Disaster Recovery / Business Continuity -

Is inherent to the core of the ANGEN network and services design. All equipment and all network elements are redundant, physically and logically within the network. However, there are types of failures that can cause outages of individual elements that affect operations at individual PSAPs or regions.

To combat this INdigital offers a network backup system called MEVO. MEVO has been described as a smart phone for 911, providing a fully functional PSAP in a low cost VOIP phone. MEVO can be deployed at the PSAP, emergency operations center, and/or via crash kit.

Section 5 - System Reporting and i3 Logging Requirements

INdigital provides a transparent logging and reporting tool called the PSAP toolkit for IN911 stakeholders. The toolkit allows for the state board and or PSAPs to view call detail records or call statistics of everything processing the IN911 network.

In addition to the toolkit we have also partnered with e-Cats to provide customizable report capabilities. The depth and services of the e-Cats system is optional and is considered a service enhancement of the PSAP toolkit.

Section 6 - Service / Support Requirements

6.2 Help Desk -

Quality Resolution Center (QRC) 24/7 call center with escalation to technicians.

6.6 Network Operations Center (NOC) -

INdigital is providing a NOC service that is monitored 24x7x365. Monitoring systems will provide text, email, custom dashboards, and visual notification of system failures.

Appendix C-2 - Cost Assumptions, Conditions and Constraints

Section 2 - ANGEN ESInet Requirements

2.2 ANGEN ESInet Services

PSAP IP Mesh Transport Network - includes dual facilities to:

118 Alabama PSAPs
2 LECs in Florida
2 LECs in Georgia
2 LECs in Mississippi
2 LECs in Tennessee

IP Core Router Architecture (aggregation service routers) - includes dual facilities to:

2 Core to Core network connections
19 Carrier ESInet interconnection

Commodity IP (tertiary service provider networks) - includes single commodity IP connection to each of the 118 Alabama PSAPs.

Section 3 - ANGEN Specific Requirements

3.3 Text to 911 Requirements - pricing assumes state population of approximately 4.8 Million. 480 units reflects units of 10,000 population.

Section 4 - ANGEN i3 / NG Core Services Requirements

4.1 NENA i3 Core Functional Requirements

SS7 Legacy Gateways - units based on number of SS7 trunks required to connect to wireless carriers and LEC selective routers.

IP Call routing platform - pricing assumes state population of approximately 4.8 Million. 480 units reflects units of 10,000 population.

4.3 Emergency Call Routing Function (ECRF) - pricing assumes state population of approximately 4.8 Million. 480 units reflects units of 10,000 population. ECRF is an end state product that would be phased in as the Legacy Database is phased out.

4.6 Legacy PSAP Gateway (LPG) - pricing assumes 2 gateway routers per each of the 118 Alabama PSAPs.

4.9 Legacy Database Services - pricing assumes state population of approximately 4.8 Million. 480 units reflects units of 10,000 population. Legacy database is a transitional service and would be phased out as the ECRF is phased in.

4.10 Disaster Recovery / Business Continuity - pricing assumes 2 MEVO phones per each of the 118 Alabama PSAPs.

Section 5 - System Reporting and i3 Logging Requirements

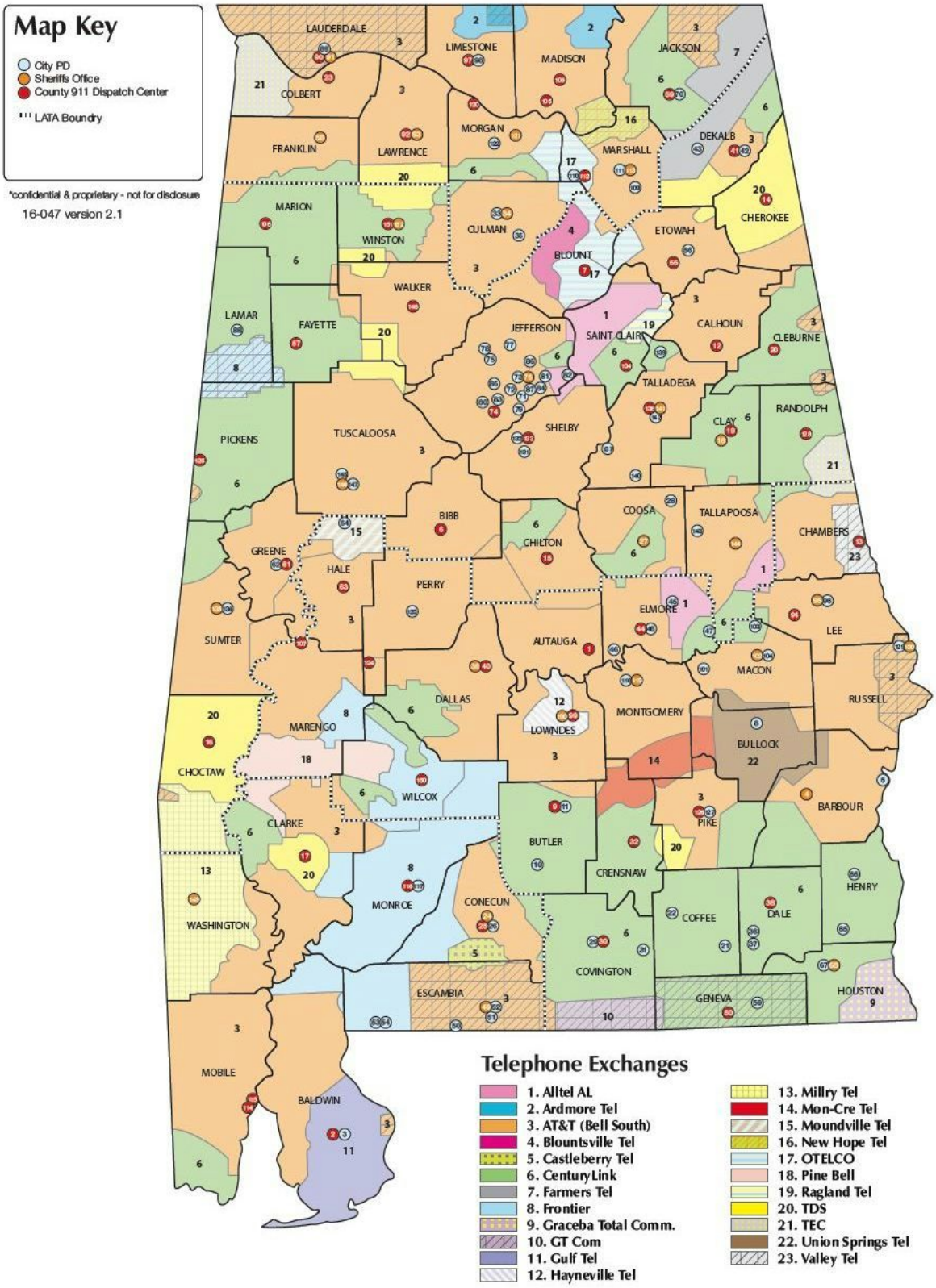
- 2 host locations within the ANGEN network where data will be aggregated and processed
- 118 end points
- VPN Tunnel or other managed service will be provided in order to gain access for maintenance and data transmission
- End to end network and PSAP data collection and reporting required
- Annual call volumes are representative of wireless calls and not wireline or administrative calls

Section 6 - Service / Support Requirements

6.2 Help Desk - unit pricing assumes one unit per Alabama PSAP.

6.6 Network Operations Center (NOC) - unit pricing assumes one unit per Alabama PSAP.

ATTACHMENT D TECHNICAL SPECIFICATIONS
AL-NG9-1-1-RFP-16-001



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SECTION 7 ELECTRICAL, WIRING, AND CABLE REQUIREMENTS

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ATTACHMENT D TECHNICAL SPECIFICATIONS

AL-NG9-1-1-RFP-16-001

SECTION 1 RESPONSE INSTRUCTIONS

1.1 GENERAL RESPONSE INSTRUCTIONS

1.2 SCOPE OF PROCUREMENT

1.2.1 PURPOSE

Response: Comply

1.2.2 PROJECT OVERVIEW

Response: Comply, and exceed certain requirements.

1.2.3 SCOPE OF SERVICES

Response: Comply.

1.3 STANDARDS

Response: Comply

INdigital is an active contributor and participant in standards bodies, industry associations, and work groups. The company has extensive experience in transitional networks involving the type of work proposed in this RFP.

The company's body of work adheres to these evolving standards, but also exceeds these minimum requirements in several key areas.

Due to the evolving nature of NENA i3 standards, and the 'gaps' that exist related to transitional networks, INdigital has taken a more progressive approach. In areas where the standards are silent as to architecture or protocols, INdigital forecasts what the eventual standards are likely to embody.

While this RFP seeks to have the limitations of this approach set out in our response, our experience has been that this approach eliminates the limitations of transitional NG networks such as the one proposed for ANGEN.

1.3.1 OPEN STANDARDS

Response: Comply

See also the response in 1.3

1.4 ANGEN BACKGROUND

Response: Understood

Our work in Indiana parallels much of the Alabama ANGEN project. Our work effort there started in 2005. The first generation of the project is nearly identical to the state of the ANGEN network today. All wireless providers consolidated into a mated pair of tandems, which then handed off to the legacy LEC selective routers.

Over time, we built out an IP mesh network to connect the two mated tandems directly to the PSAPs. Wireline 911 remained on the legacy selective routers. With the establishment of the IP network, we migrated the wireless ANi services to the mesh IP network.

This provided a way to get statewide call statistics and also allowed the creation of statewide call transfers with ANi data. These initiatives of the project lead to the later refinements of the statewide IP based ESiNet.

Over time, the network has continued to evolve, from the generation 1 and generation 2 network configurations to the generation 11 (2011 design) and is now migrating to the generation 15 (G-15) network.

The G-15 network will be two mated ESiNets - one provided by INdigital, which is the primary ESiNet, and a fully capable second ESiNet provided by AT&T. The two networks can function jointly, or either can independently provide service for the entire state, providing an openly competitive service and equipment environment, as well as best in class NG9-1-1 services.

Our response is based on this work experience and the further refinement of the successful approach we have used.

Our plan is to deploy as many of the call processing elements within the state of Alabama as practical, keeping the service as local as possible.

SECTION 2 ANGEN ESINET REQUIREMENTS

2.1 ANGEN ESINET DESIGN GOALS AND OBJECTIVES

Response: Comply

The diagram below shows the call flow from the public caller, through the FE (LNG) at the edge of the ESiNet, and thru the i3 FEs. The integration of the legacy ALi platform and the legacy selective routers connecting to the legacy PSAPs is also depicted.

This is the first phase of the project, which replaces the current equipment and provider's solution with an INdigital NG core system.

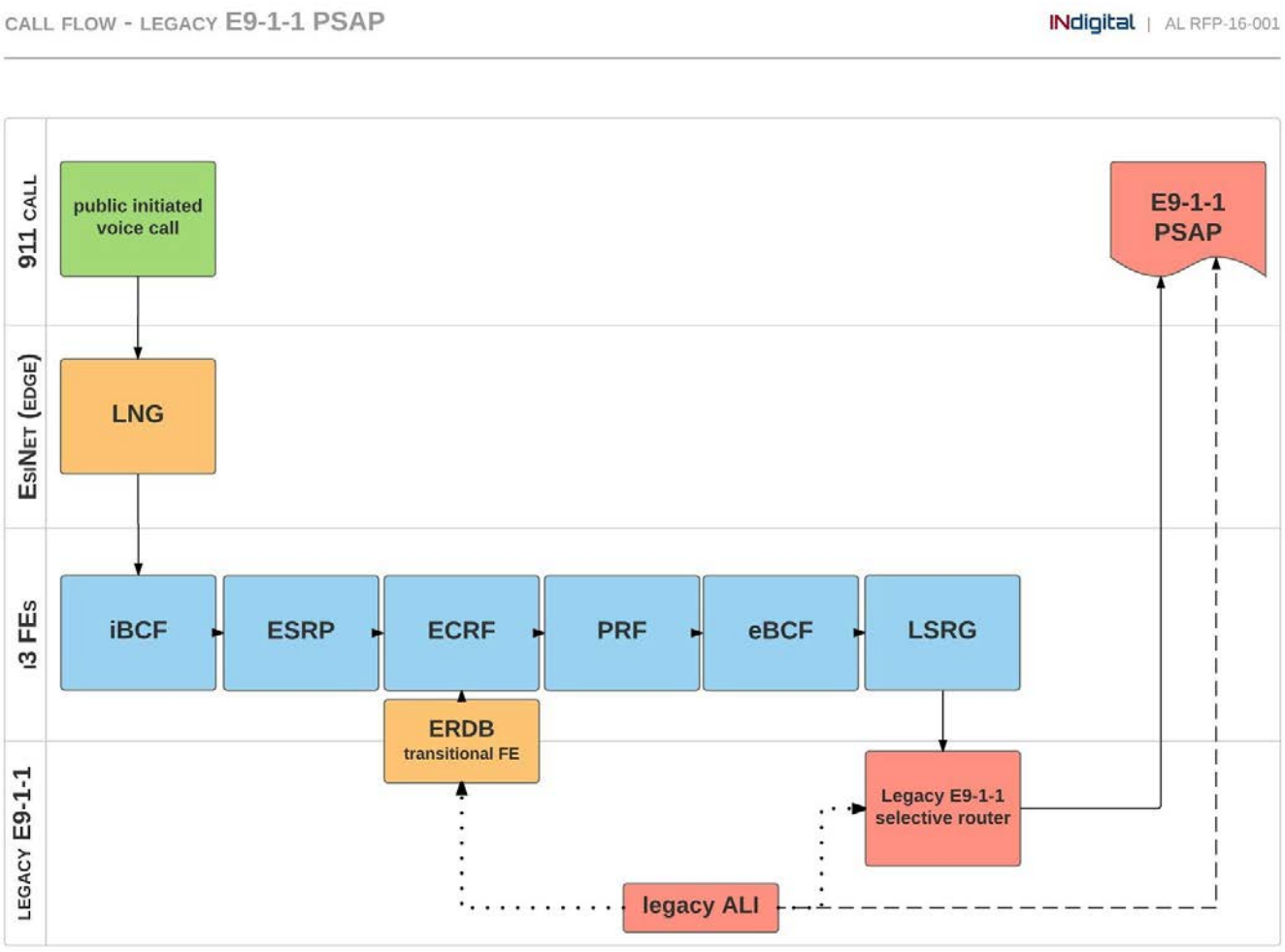


Figure 1 - Legacy E9-1-1 PSAP

The diagram below shows the call flow from the public caller to either a legacy PSAP (served by the legacy selective routers of the current 911 system service provider(s) and an i3 PSAP connected directly to the new ANGEN ESiNet outlined in this response.

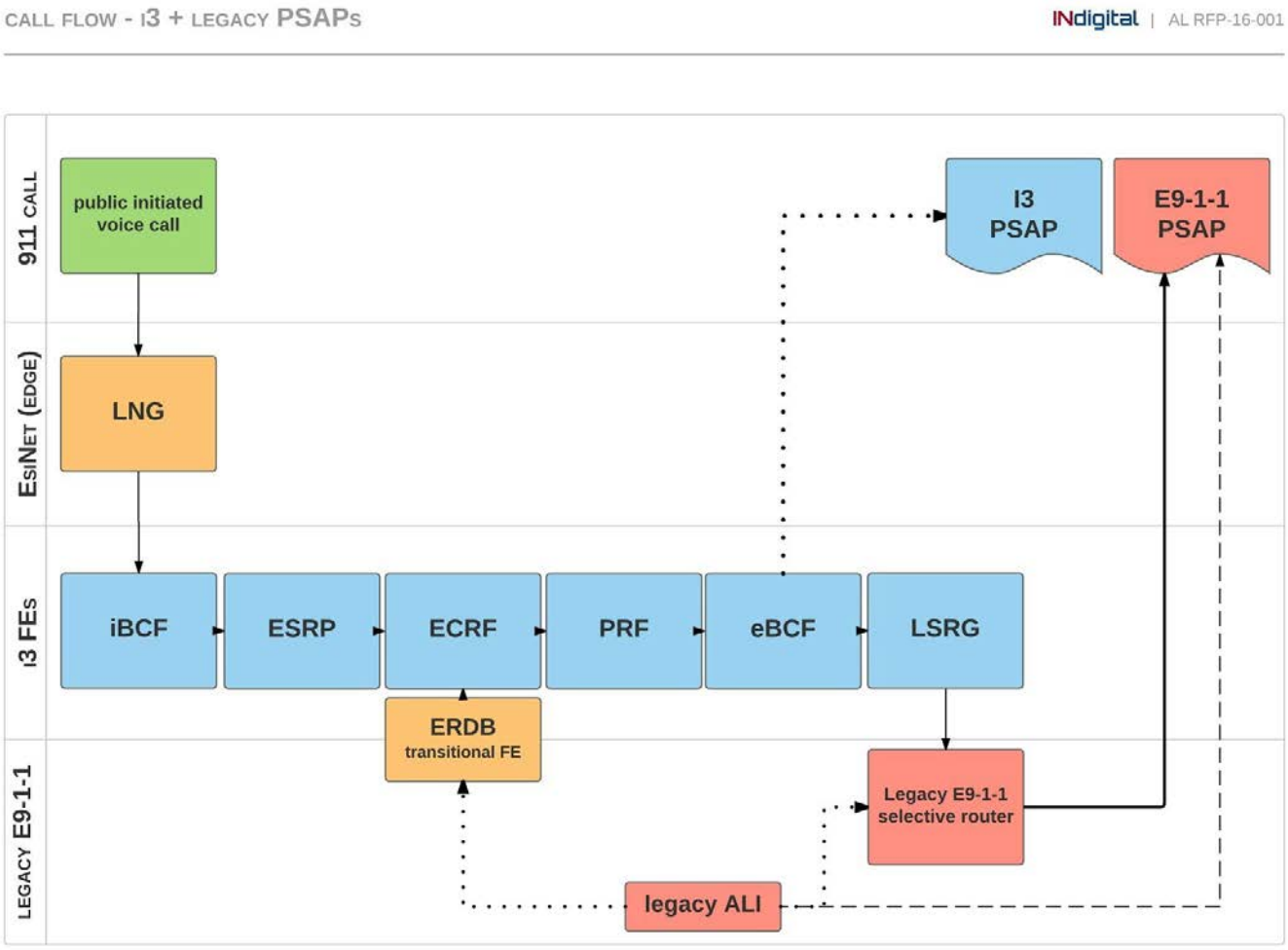


Figure 2 - i3 and legacy E9-1-1 PSAP

The diagram below shows a connection from the ESiNet to an i3 PSAP. Certain types of calls (landline, PS-ALi, VoIP and wireless) may continue to be provided using legacy signalling protocols, even though the NG9-1-1 ESiNet is available.

This is the hybrid of a transitional network.

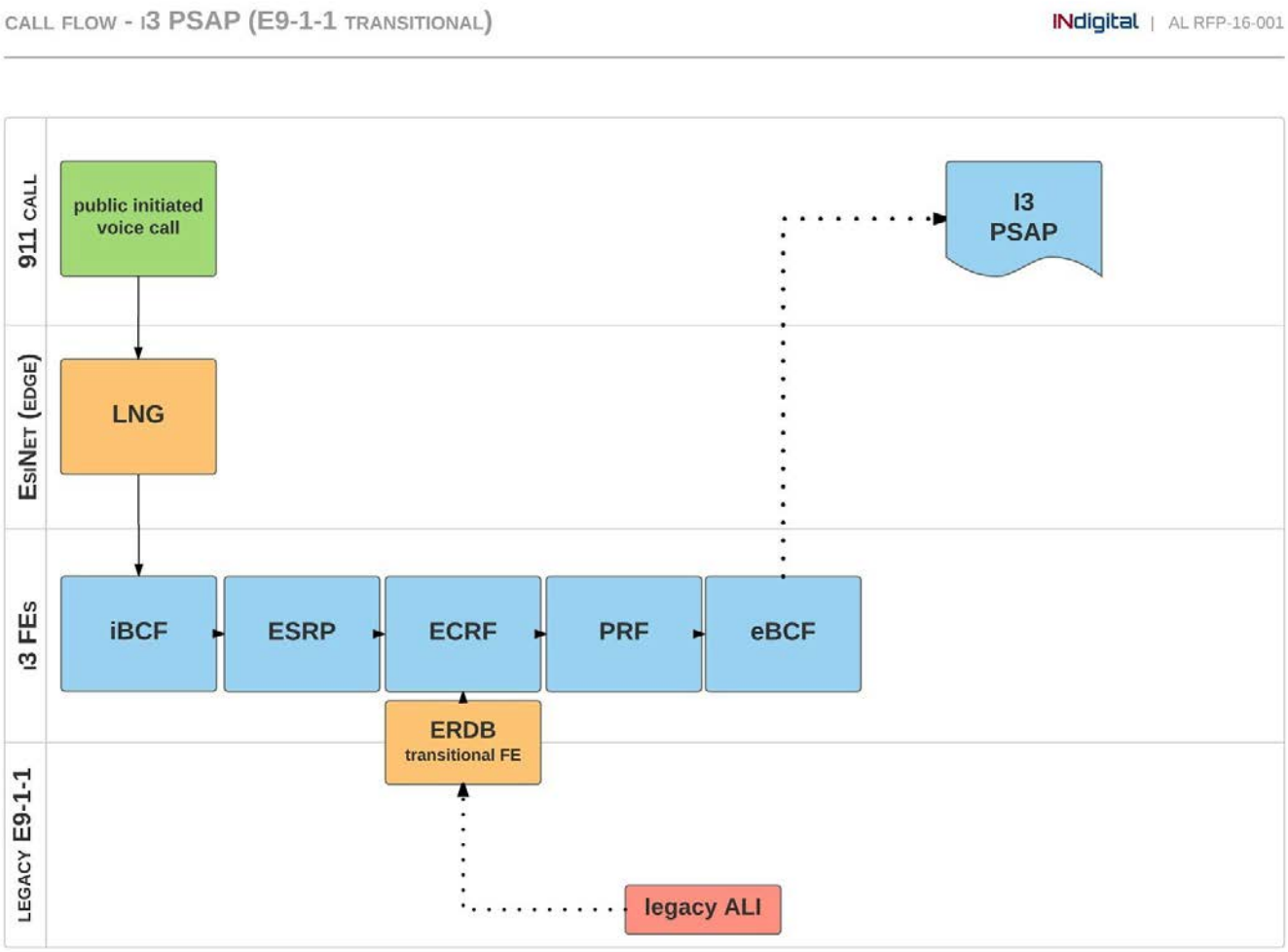


Figure 3 - i3 PSAP in an E9-1-1 transitional ESiNet

The diagram below shows one method of delivery for non-voice (text messaging) media proposed in this response. In this example, NE and FE core elements support both voice and non-voice media.

This diagram does not show all possible FEs or PSAP CPE configurations, but is intended to depict the flexibility of our design to accommodate multiple stages of transition.

Not shown in this diagram is the detail of the GIS subsystem, which provides non-voice routing and processing.

A variation on this diagram would also serve a legacy PSAP through the addition of an HTTP human to machine interface (browser client.)

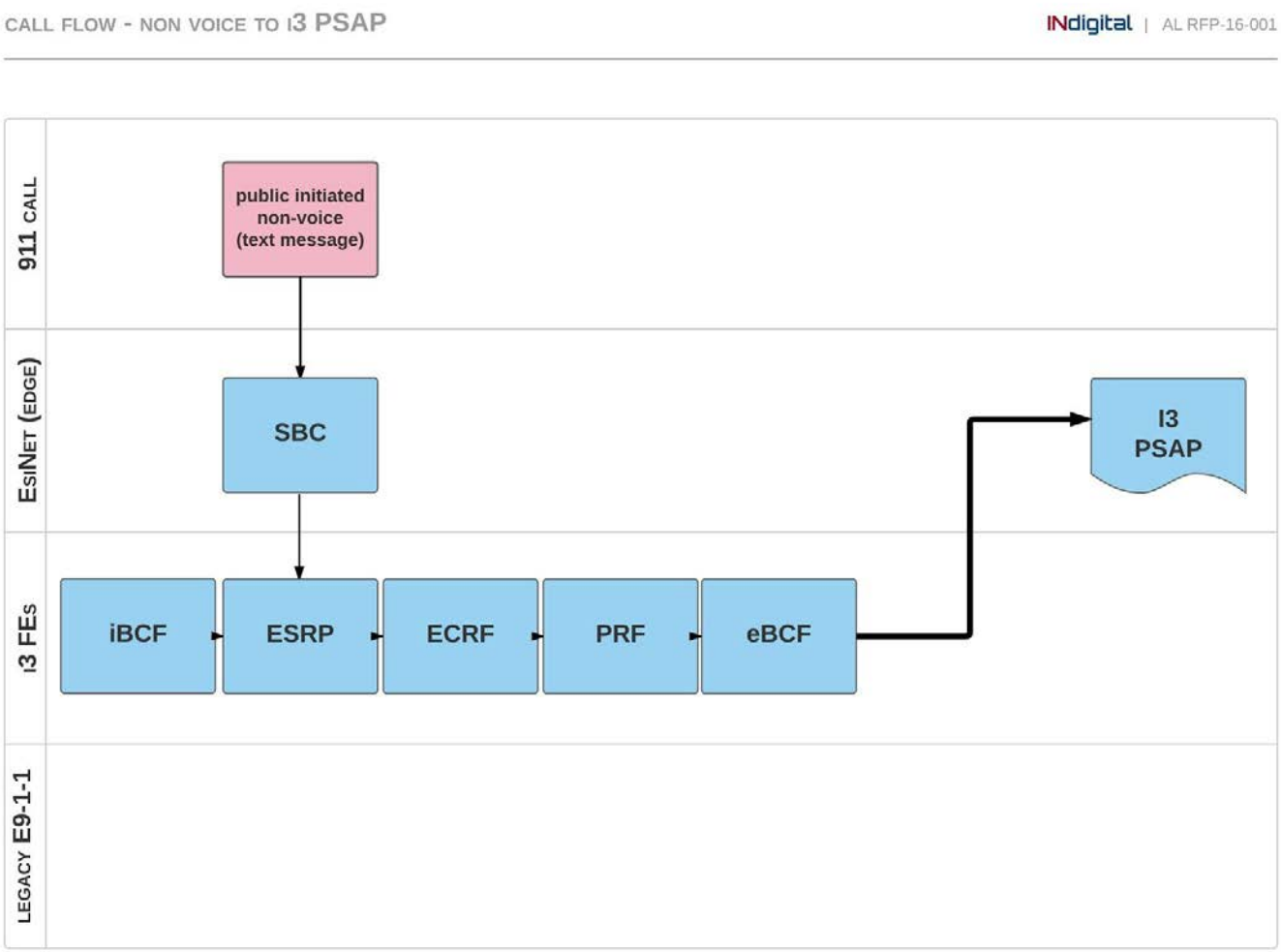


Figure 4 - non-voice to an i3 PSAP

2.2 ANGEN ESINET SERVICES

Response: Comply

INdigital has extensive experience in the design, creation, and management of IP based ESiNets. The company has successfully managed multi-phase projects such as the the type proposed to advance the ANGEN network to completion.

Our response includes the development of integration methods with other networks, uniform PSAP numbering plans and the uniform naming of network and functional elements that adhere to industry standards.

The INdigital response and pricing structure is designed to provide the ANGEN board with a path from a transition of the current system to the successor platform and systems we have proposed, and then continue the transition toward a full i3 network.

This multi-phased approach gives ANGEN the most flexibility in the project design and implementation.

The initial phase of the project would be focused on the transition of the current Bandwidth provided system with the goal of maintaining the current method of wireless call delivery to the legacy LEC Selective Routers.

There are several approaches that could be taken to transition the existing ANGEN network from one provider to another. As we develop this initial response we do not have all the information we need to recommend one approach over another.

Our approach is to work with ANGEN and its current vendor and develop the best practical solution for a transition. We have met with the current network operator to discuss these concepts, but we have not finalized any formal arrangements.

With regard to FirstNet, the proposed design can be integrated with - and provide interoperability with other IP networks - and can use commodity transport of the type outlined in the FirstNet RFP.

2.3 ANGEN ESINET ARCHITECTURE REQUIREMENTS

Response: Comply

2.3.1 ESINET NETWORK DIAGRAM(S)

Response: Comply

Core network design:

INdigital's initial design objective is to utilize current ANGEN assets when and where acceptable. Depending on the outcome of asset re-use, there could enhancements

or better strategic POI and/or datacenters available than those considered during the initial design phase.

The overall design objective for our version of the ANGEN network is to have 3 layers of redundancy, and as much diversity between carrier and physical connections as possible.

The drawing below highlights these objectives and introduces the concepts of an additional POI, and alternate network paths to further enhance the existing network design.

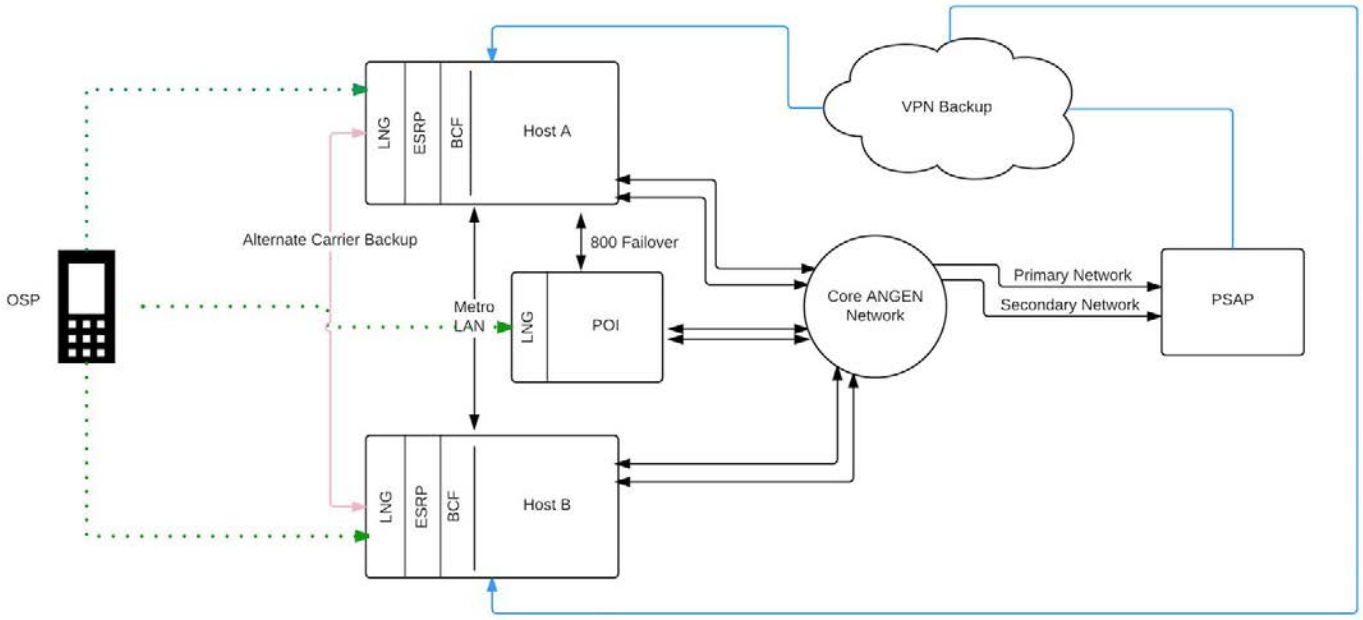


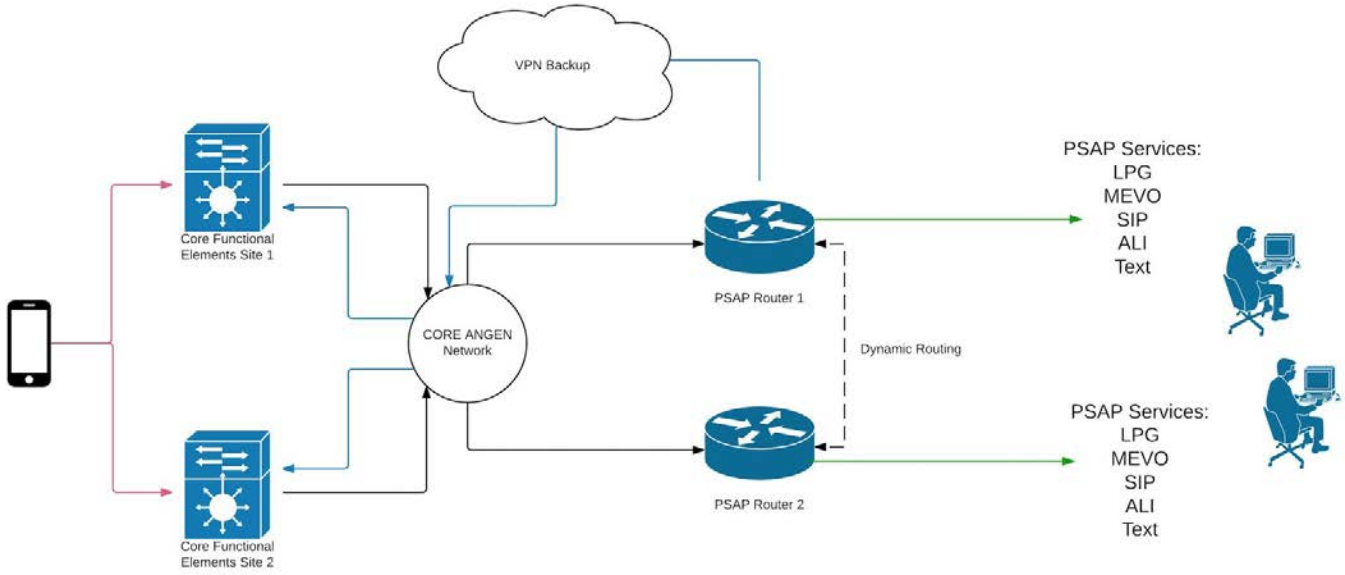
Figure 5 - ESiNet high level diagram

Notes and assumptions for this network design:

The PSAP is connected to the core ANGEN network in a redundant configuration with VPN failover. We believe that redundant IP connections meeting the bandwidth requirements are available for purchase from ASA. A commodity IP connection such as 4G, Cable, DSL, or Metro Ethernet is available at the PSAP for VPN connectivity.

PSAP locations are highlighted by the installation of redundant routers, utilizing dynamic routing protocols. The routers are configured to perform failover routing in the event of router failure and or a circuit failure at the PSAP. INdigital utilizes a variety of routing protocols such as BGP, OSPF, BFD, and other routing protocols.

PSAP will utilize services provided by INdigital such as LPG, MEVO, ALI, text, and other 911 related services.



2.4 ANGEN ESINET FEATURES AND FUNCTIONS

Response: Comply

The proposed design fully complies with the current and evolving NENA i3, ATIS and other industry standards. The software, network elements and functional elements in this proposal have been widely deployed and extensively tested at industry collaboration events (NENA ICE) and in production.

The company operates or controls the operation of its own service platforms that provide interoperability for any type of connecting originating service provider (OSP) and 911 system service provider, both legacy and NG9-1-1.

These include sub-system and control plane services, such as:

- SS7 (signaling system seven)
- ALi platforms
- routing database platforms
  (using both legacy tabular databases and GIS databases)
- private system ALi

In addition, the company fully supports all vendors of CPE and other PSAP equipment with standard interfaces and protocols.

INdigital is highly experienced in developing, providing and implementing traditional interconnection agreements under FCC sections 251 / 252, as well as private Commercial Agreements for the exchange of emergency calls.

In many other jurisdictions, INdigital has these types of interoperability Agreements, Contracts and regulatory ordered Connection Arrangements in place.

Many of these were first created, developed and put in place by the company as part of the growth of its business.

Particularly as it relates to the ANGEN project, we would offer that no other company is better qualified or has more extensive experience in moving the shared goals of the Board and the PSAPs forward from the current state of the ANGEN project.

INdigital has the flexibility -- and capability -- at the core service level to allow it to build on the current operation provided by the ANGEN network without going back to square one.

1. **Operations** - The company has extensive experience in the operation and updates to the type of transitional E9-1-1 to NG9-1-1 network represented by the current ANGEN network. In the broader, ongoing aspect, the company has successfully migrated transitional networks such as ANGEN toward a more fully developed i3 ESiNet.

   These approaches include the type of full service needed for the successful and respected project support for OSP's of all types.

   The company issues, tracks receives and acknowledges industry standard (OBF - Ordering and Billing Forum) ASR's (access service requests) as well as more informal 'meet me' connection arrangements.

   For IP connections, often used in emerging types of interfaces and media types, the company has developed an NE and FE naming convention that has been based adapted from legacy systems. This provides an efficient and effective recordkeeping system as well as an order processing system that is recognizable to all the OSPs connecting to the ANGEN system.

2. **Security** - INdigital recommends the deployment of a private core ESi-net. Interconnection to "Public" networks are established through the use of Session Border Controllers, VPN, and other security related ESi-Net functional elements.

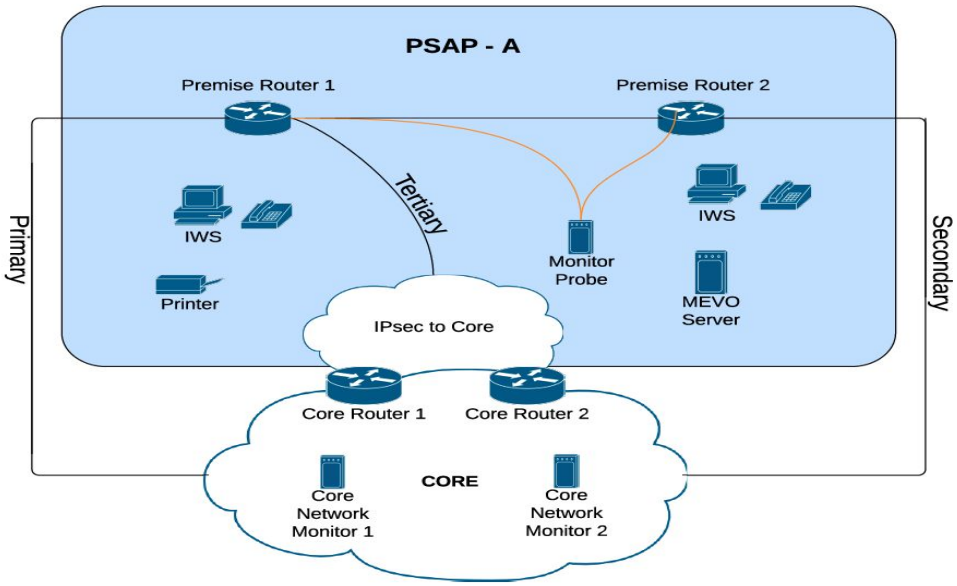
   In addition to the physical security INdigital also fully supports the recommendations and best practices highlights in NENA document NG-SEC 75-001

3. **Availability** - INdigital operates 24x7 365 days a year. In the event that escalation is required INdigital will provide an ICE (In Case of Emergency) telephone number that is directed to senior management of the company.

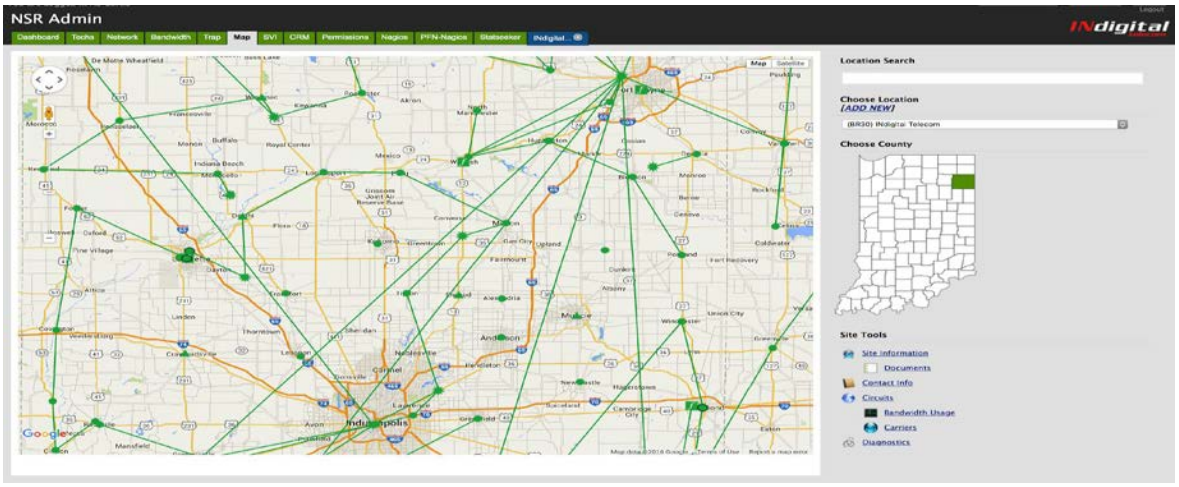
4. **Monitoring** - INdigital provides an extensive system of monitoring systems. Much like NG 911 is a system of systems, so is the INdigital monitoring suite of

products. The monitoring system includes everything from bandwidth, trunking, application, resource management, system management, change control, and service level achievement (SLA).

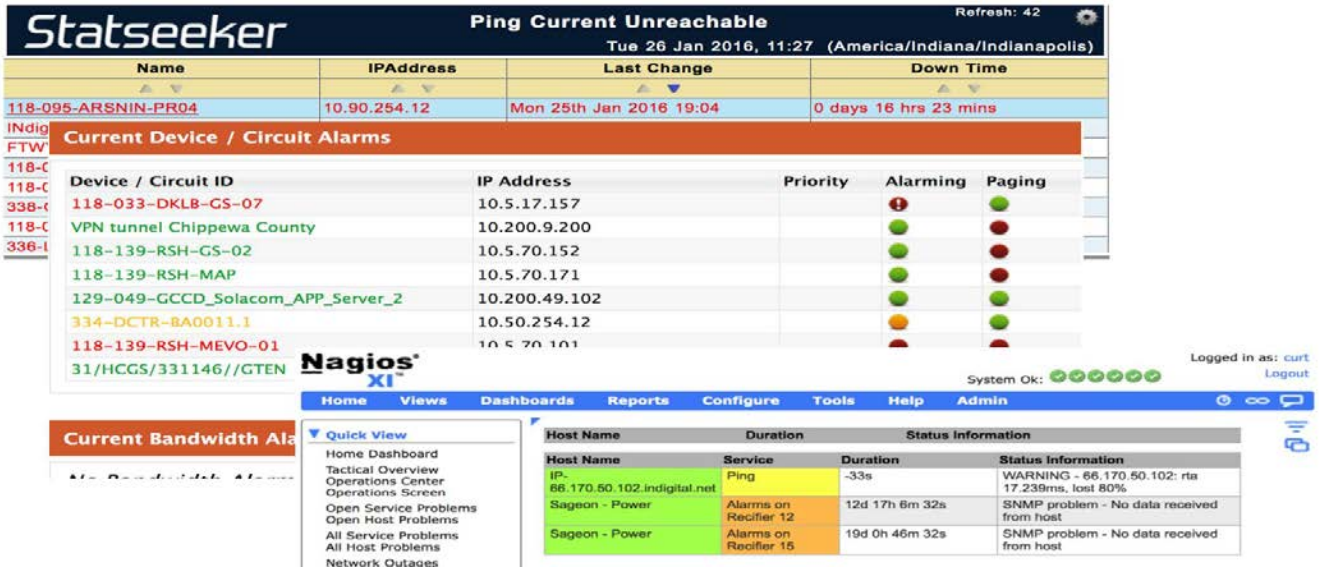
Unique to the INdigital design of monitoring is the distributed probe approach. Not only is INdigital monitoring for the core network but also from the PSAP edge back into the network.



With the use of monitoring probes at the edge of network it gives us a full picture view of the service delivery at the PSAP, thus ensuring the highest levels of service at the PSAP.



As part of our response INdigital will provide ANGEN with network status maps to display the health of the ESi-NET to the all the ANGEN stakeholders.



5. **Alarming** - The INdigital monitoring system provide multiple layers of system alarming to INdigital technicians and ANGEN stakeholders. We provide consolidated dashboard overviews, and detailed element status within the monitoring systems. In addition to this we also provide email and text message notification of system failures.

Alarms are classified as follows:

- Critical
- Major
- Minor
- General Notice

6. **Maintenance** - In conjunction with its 911 system stakeholders, INdigital has created industry leading maintenance procedures and work guidelines.

   The INdigital work safety plan (IWSP) was created to provide notification and transparency to 911 system stakeholders.

   In the event that maintenance work is required, INdigital creates a comprehensive document describing what work needs to be completed, and a step by step guide on the work will be completed.

   Once the plan has been created notification is provided to the

stakeholders. The Technical work is described and expected maintenance results are defined in the Maintenance Operation and Protocol (MOP) document.

Once maintenance has been completed, a final success report and all stakeholders listed in the plan are notified with the results.

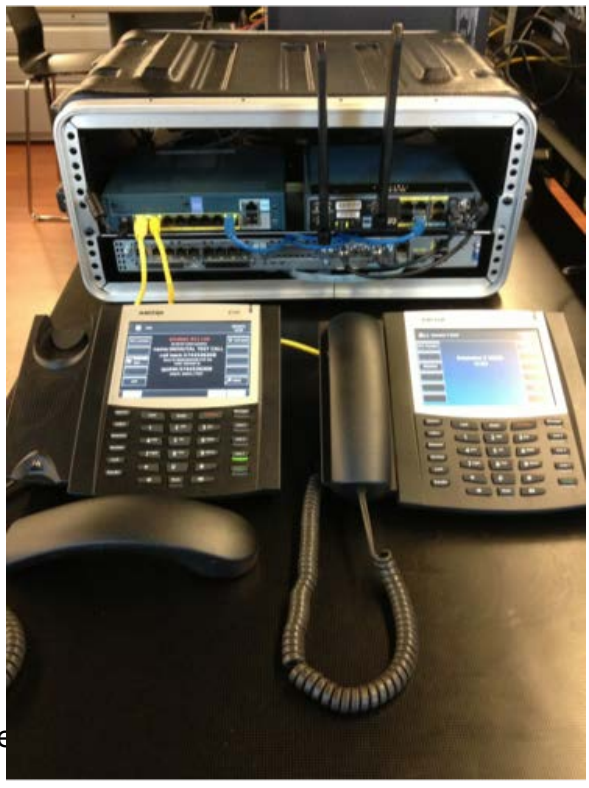
In the event that the technical MOP results in failure, INdigital also that the IWSP have a plan to 'revert back' forming a service restoration plan. We have found this process to be an extremely successful in creating an environment of consistent quality results.

7. **Disaster Recovery** - INdigital has created a disaster recovery platform known as the MEssage EVOlution (MEVO) platform that is directly integrated with the NG core FE's.

   This platform uses commodity, off the shelf touchscreen IP phones as the end user devices, and supports all network functions, including:

   - Delivery of all classes of calls, (wireline, wireless, VoIP.)
   - Legacy phase II location display and rebid capability.
   - Full transfer with ALi data between agencies
   - Direct or indirect integration of PSAP administrative phone lines
   - An integrated policy routing function (PRF)
   - An integrated call logging and recording service platform, along with support for all types of third party provided logging services and platforms.
   - Complete with Banana Phone Ring Tone

The MEVO disaster recovery system allows for 9-1-1 calls to be routed to a VOIP phone; dis-associated administrative line or cell phone. The phone requires much less bandwidth to operate than traditional 9-1-1 systems, allowing for the system to be deployed on consumer grade IP connections such as cable, DSL, local fiber, or 3G/4G wireless networks.



MEVO also provides an enhanced level of 9-1-1 functionality critical to PSAP operation. These features include display of location information, rebid, call back, instant recall, and call history tools. These tools allow a full functionality for a dispatcher to "operate as normal" while using the backup system. MEVO is also ideally suited

for secondary agencies and command center configurations.

The Indiana State Police (which operate as a secondary agency) use a customized MEVO platform as their primary call taking platform. MEVO has an attractive price point, and is easily integrated into operation protocols. For a secondary agency with distributed call centers, this approach is a great fit.

This approach allows INdigital to create a lower cost primary controller, and use the hot standby disaster recovery platform in an 'active + active' 9-1-1 delivery platform.

In addition to the 911 capabilities, the MEVO system also operates as PBX within its core. This allows the use of the platform as a general administrate system, which we have also proposed.

8. **Service Restoration** - The goal of INdigital's ESi-Net design is to limit the impact of a major event to the PSAP. This is why we have created systems such MEVO to ensure that there is always backup to the backup, to ensure 911 call completion. In addition to our design practices we have also implemented strong policies and procedures within the company's operation to ensure shortest path service restoration.

   INdigital has 3 tiers of technicians and engineers available at all times. In the event of an escalated issue INdigital issues a company wide request for company assets to join a predetermined conference bridge to join all of restoration efforts into one place.

   Within the conference bridge certain roles and responsibilities are divided up between Executive Managers, Senior Engineers, Technicians, and Customer Outreach/Notification. Our goal is to be organized, transparent, and in touch with all stakeholders during the restoration process.

9. **Outage Mitigation** - Our proposal for 911 services include a design criteria with no single point of failure or fault domains. There will be multiple levels of redundancy to ensure citizens have access to 911 during network events or incidents.

   In addition, the INdigital core NG9-1-1 platform provides a way for a 911 call from an OSP (originating service provider), to establish SS7 trunking using one of three delivery methods:

   - a primary SS7 delivery point to Host A
   - a secondary SS7 delivery point to Host B
   - a tertiary routing into the ESiNet via a CSRIC IV best practice of an 800 number failover provided by the ESiNet.

The benefit of this 800 number failover is that during a service impairment, the public caller will reach the ESRP FE, which can use the ANI of the 911 caller (from the toll free DNIS trunk) to allow the ESiNet functional elements to route the 911 call to the appropriate PSAP.

This ensures that the public caller still reaches a PSAP, and that the PSAP is still able to receive ANI / pANI (and if available) ALI at the call taker workstation. This allows the 911 dispatcher to continue normal operations even in severely disrupted 911 network.

10. **Core Routing** - INdigital's core routing FEs have been deployed and refined for many years. For transitional service and for non-voice service, the proposed Session Initiation Protocol : Message Engine (SIP:ME) platform in current production has been independently tested for capacity.

    An Illinois Institute of Technology (IIT) graduate study program load tested our design and implementation. Those findings were that SIP:ME could route, process and deliver over 10,000 calls per hour for each service node. Since that time, we upgraded the SIP:ME platform in April of 2014, and it is now capable of 100,000 busy hour call attempts.

    Based on field experience for our overall design methods, an earlier version of the current SIP:ME platform and earlier PRF subsystem had the ability to route and deliver just over 1,800 calls that arrived in a call flood in less than 5 minutes during an earthquake in southern Indiana in 2010. There have been a number of upgrades to the platform in the past 4 years, further increasing its capacity.

11. **Interface to Hosted solutions** - INdigital has participated in all NENA Industry Collaboration Events (ICE) as well as private lab testing configurations with major vendors of all types of CPE and ancillary services.

    Within our lab and industry testing, the company has a proven history of interoperability in transitional and i3 deployments. The company also supports the ATIS RFAI protocol (Intrado A-911.)

    The ESiNet proposed supports i3, intermediate transitional SIP, T-1 and reverse battery CAMA, MultiFrequency T-1 interfaces, and PRI interface options. This provides full support for hosted systems, with full flexibility within the ANGEN network.

    This flexibility removes all barriers to participation regardless of the age or capabilities of the PSAP CPE or other equipment.

12. **Fault zone design methodology** - One of the primary lessons the company has learned as a large ESiNet provider is the importance of minimizing fault domains during the design and implementation process.

    Minimizing fault domains begins with the engineering principle of utilizing a distributed network architecture. Our approach moves the Network Elements to the edge of the network. This limits the potential for a point of failure to a PSAP or smaller region instead of affecting large geographical areas.

    An example of this is our use of redundant PSAP routers. PSAP routers are designed and configured to handle nearly all of the routing decisions required to serve a PSAP. The PSAP routers act independently of the Core service network utilizing advanced protocols (such as BGP, BFD, VPN, and GRE tunnels.)

    This same design carries over into our approach with legacy network gateway (LNG) functional elements.

    By utilizing LNG systems that are distributed and non-centralized, we can minimize the effects of ingress trunking failures.

    This in-state distributed architecture allows the originating service providers (OSPs) to connect to the ESiNET at the point of interconnection (POI) that works best for them, and opens the possibilities of the OSP to use multiple networks to connect to the LNG sites.

    Folded, redundant networks are considered to be a single point of failure, and we take every precaution to work with the OSPs to minimize these type of single fault domains that can result in service failures.

    With regard to routing protocols, our response is fully compliant with the recommendations of NENA 08-003, and uses border gateway protocol (BGP) , within the ESiNet to maintain high availability.

2.4.1 VOLUME AND PERFORMANCE

Response: Comply

2.4.2 NETWORK AVAILABILITY & RELIABILITY

Response: Comply

As stated in the previous sections, our design approach eliminates single fault domains through the use of redundant network elements and transport segments.

This is one of the areas where we have a concern. The current ANGEN network relies heavily (and perhaps exclusively) on the ASA network. Our approach is to

acquire redundant commodity transport facilities from other network providers. By adding additional commodity transport, the reliability of the ESiNet can attain 5 nines performance.

Our proposed SLA is set out in the appendix of this response.

2.4.3 INTERCONNECTION OF OTHER NETWORKS AND SYSTEMS

Response: Comply

INdigital utilizes VLAN technologies and adheres to NENA recommended standards to segment and prioritize different types of traffic within the ESiNet. Each port on the PSAP router, or each tag level of the VLAN can be configured to support different types of service and traffic.

INdigital has extensive experience supporting many different manufacturers and their service platforms.

2.4.4 QUALITY OF SERVICE FEATURES

Response: Comply with possible exemption

The operating characteristics of the ASA are not known to us at the time of this response. However the information that we have gathered is the ASA network is made up of a network of networks design, making full compliance likely. The routing configurations we use would not diminish the performance of the ASA network.

In our overall design for 911 service delivery, we require that public safety traffic have the highest priority within the transport provided by ASA if they are the primary provider of ESiNet transport.

INdigital is planning on utilizing multiple providers within the ANGEN ESiNet to create 3 distinct transport sectors within the ESiNet for service delivery:

- Core network - Between SIP:ME installation points
- Legacy Gateways to core network
- PSAP to core network

The network segments outlined can be built from a combination of traditional Ethernet, POS(Packet of SONET), TDM (T1/DS3) or MPLS, IP-VPN. The core requirements are very similar to most VoIP applications. In a general design, elements of the network need to be connected via physically diverse routes and premise routers in a fully redundant configuration.

Core network requirements

INdigital is proposing the use of the generally available ASA core IP network to interconnect the Core ESInet functional elements (FEs) at the host sites.

- Each selective router require redundant connections to the ANGEN core IP network
- The connections to the core network will be made via 1000MB Ethernet connection to the edge router
  - IP addressing is expected to be routable private IP's
  - Core routers must provide 99.999% network availability to edge routers
  - INdigital requires the core network to route via BGP or equivalent protocol between core routers

- *Voice (Bearer Traffic)*
  - network latency between selective ESRP's is expected to less than 60 ms 99.9% and 100 ms 99.999% of the time
  - packet loss is expected to be less than 0.05% between selective router sites 99.999% of the time
  - Voice traffic should be marked to DSCP (Differentiated Services Code Point) EF (Expedited Forwarding) per the QoS Baseline and RFC 3246.
  - Average one-way Jitter should be targeted under 30 ms 99.99% of the time.
  - 100 kbps of guaranteed DSCP - EF priority bandwidth is required per call

Network requirements of PSTN gateways

The PSTN (SS7, PRI, or CAMA) gateways that are not located at the same physical location as the ESRP, IP connectivity to the core network/ESRP is required.

- gateway connections to edge routers
  - IP addressing is expected to be routable private IP's
  - Core routers must provide 99.999% network availability to edge routers
  - INdigital requires the core network to route via BGP or equivalent protocol between core routers

- *Voice (Bearer Traffic)*
  - network latency between selective router sites is expected to less than 60ms 99.99% and 100 ms 99.999% of the time
  - packet loss is expected to less than 0.05% between selective

router sites
- Average one-way Jitter should be targeted under 30 ms 99.99% of the time.
- Voice traffic should be marked to DSCP (Differentiated Services Code Point) EF (Expedited Forwarding) per the QoS Baseline and RFC 3246.
- 100 kbps of guaranteed DSCP - EF priority bandwidth is required per call

Network requirements to the PSAP

The PSAP (Public Safety Answering Point) requires network connectivity to the core ESi-NET. It is preferred this is accomplished via diversely routed redundant dedicated facilities . A third connection can be accomplished via public best effort business grade Internet and VPN tunnels.

- IP connections to the PSAP are expected to be redundant and utilize different IP technologies
  - IP services include T1, bonded T1, metro ethernet, DSL
  - best effort public IP services are expected to be firewalled and tunneled into the 911 emergency service network
  - IP addressing is expected to be routable private IP's
  - INdigital requires the core network to route via BGP or equivalent protocol between core routers

- Voice (Bearer Traffic)
  - network latency between selective router sites is expected to less than 100 ms 99.999% of the time
  - packet loss is expected to less than 0.1% between PSAP to selective router sites
  - Average one-way Jitter should be targeted under 30 ms.
  - additional bandwidth may be required for hosted CPE customers with administrative phone line integration
  - Voice traffic should be marked to DSCP (Differentiated Services Code Point) EF (Expedited Forwarding) per the QoS Baseline and RFC 3246.
  - 100 kbps of guaranteed DSCP - EF priority bandwidth is required per call

The total capacity of the EF priority traffic will be determined by the calculation of the number of concurrent 911 calls and other ESi-Net traffic.

Operation, Administration & Management (OA&M) will use a dedicated 10 MB internet connection (and an on net equivalent connection) for remote management by INdigital. Each core FE site will have this type of redundant connection.

2.4.5 TRAFFIC PRIORITIZATION NARRATIVE

Response: Comply

Please refer to our detailed response in section 2.4.4

2.4.6 SCALABILITY

Response: Comply

INdigital's preferred network design is to utilize the highest quality network providers in each core site, PSAP, or region to develop the most reliable network.

INdigital does not own network facilities, allowing us to maximize the reliability of our design by using multiple network providers and facilities. INdigital's design can utilize IP connections from a cable modem, DSL, 4G wireless, T-1, Metro Ethernet, Fiber, and pretty much any other transport method to create an ESi-Net.

By utilizing BGP, BFD, and other OSPF routing protocols, we propose to create a self healing, scalable network. If additional bandwidth or additional survivability is required, it is as simple as adding another network connection.

2.4.7 REDUNDANCY AND SURVIVABILITY

Response: Comply

INdigital has gathered limited information about the ASA network, and the provisioning of connections from the network edge to each PSAP. We tentatively conclude that ASA administration has identified multiple network providers that can provide this 'last mile' connection to each PSAP.

In addition, INdigital has contacted other middle and last mile providers that could add additional network diversity in some markets. From a physical circuit perspective, we find it possible to create a highly resilient ESiNet within the current ASA procurement process.

FCC order 13-158 requires diversity and redundancy of all network elements providing 911 service. In our proposed design, everything from the ingress to egress network of the ESiNet, and the connections to the PSAPs will be diverse and redundant. We are not anticipating any elements within the network to be a single point of failure.

In addition to the core design we have proposed, INdigital is also recommending the use of our Disaster Recovery MEVO system, and CSRIC 800 number best practice recommendations for additional service continuity.

Deployment of all these technologies within the ANGEN network are intended to exceed the highest levels of 9-1-1 service attainable today.

2.4.8 BANDWIDTH

Response: Comply

We believe the requirement 2.4.8.1 of 10Mb per PSAP should be sufficient for services provided by INdigital. Additional network requirements for 3rd party system such as CAD or shared CPE may require additional connectivity to provide service.

2.4.8.1 PSAP BANDWIDTH

Response: Comply

INdigital has tentatively identified that 10Mb of IP service is available within the ASA provider network and through the last mile connections. Addition discussion and engineering may be required, but our whiteboard engineering indicates this is an attainable requirement.

Our proposed SLA is set out in the appendix of this response.

2.4.8.2 BANDWIDTH EXPANSION

Response: Comply, subject to availability of additional capacity in the ASA network.

2.4.8.3 BANDWIDTH SHARING

Response: Comply, please refer to 2.4.4 for additional statements.

2.4.8.4 LOSS OF BANDWIDTH

Response: Comply

2.4.9 IP ROUTING

Response: Comply

IPv4 and IPv6 routing, much like Next Generation 9-1-1 is in transitional phase.

INdigital simplifies the exposure of this transition with the use of private core network segments. The only immediate exposure to IPv6 within our design would be in the external routing of an OSP connecting to an SBC.

The external interface of the ESiNet (SBC, Firewall, etc) will provide the routing between IPv6 interfaces to private IPv4 schema utilized by INdigital. With this transitional design, we do not forecast any issues with originating service providers that wish to connect to the ESiNet using IPv6.

2.4.9.1 INTERNET PROTOCOL PACKET DELIVERY

Response: Comply

2.4.9.2 IP ROUTING PROBLEM RESOLUTION

Response: Comply

INdigital has extensive experience in interconnecting with all classes of originating service providers, 911 system service providers and regional networks. In cases where the area of concern is related to IP addressing, we have industry experts on staff to quickly resolve these issues.

In cases where a particular OSP, SSP or PSAP vendor's implementation of the recommended standard may need an accommodation, we have a positive history of cooperative work with other parties.

2.4.9.3 AUTOMATIC INTERNET PROTOCOL RE-ROUTING

Response: Comply. Within the core network, INdigital uses BGP protocols to ensure continuity of routing between ESRPs, LNG's, and other functional elements. At the edge of the network, PSAP routers use a variety of routing technologies to provide failover routing between varied types of circuit.

At the PSAP, it is possible to be making routing decisions between two, three, or more different connection types. To achieve this type automatic rerouting, INdigital uses BFD for OSPF routing. Additional detail would be too large for this response.

Please see also:
http://www.cisco.com/en/US/technologies/tk648/tk365/tk480/technologies_white_paper0900aecd80244005.html

2.4.9.4 BACK TO BACK USER AGENT USAGE

Response: Comply

Seamless delivery of SIP and RTP traffic is managed at the functional element host sites with the use of multiple types of specialized SBCs. These include both ingress BCF's, and egress BCF's. RTP convergence at the edge of the ESiNet is handled by the BFD OSPF protocol in the router.

With this this configuration, it is possible to have network element or transport segment failures and maintain full ESiNet operation with minimal delays in RTP re-convergence. Where required, IPv4 to IPv6 translation is provided by these ESiNet network elements.

2.4.9.5 SUBNET NUMBER ASSIGNMENTS

Response: Comply

2.4.9.6 NETWORK STATIC ADDRESSING

Response: Comply

2.4.9.7 "LOOPBACK" INTERFACE

Response: Comply

2.4.10 DIVERSE NETWORK ENTRIES

Response: Comply

INdigital utilizes a multi carrier approach for each PSAP where economically feasible. This provides additional diversity beyond physical facilities for the PSAP, beyond what is attainable with a single carrier solution.

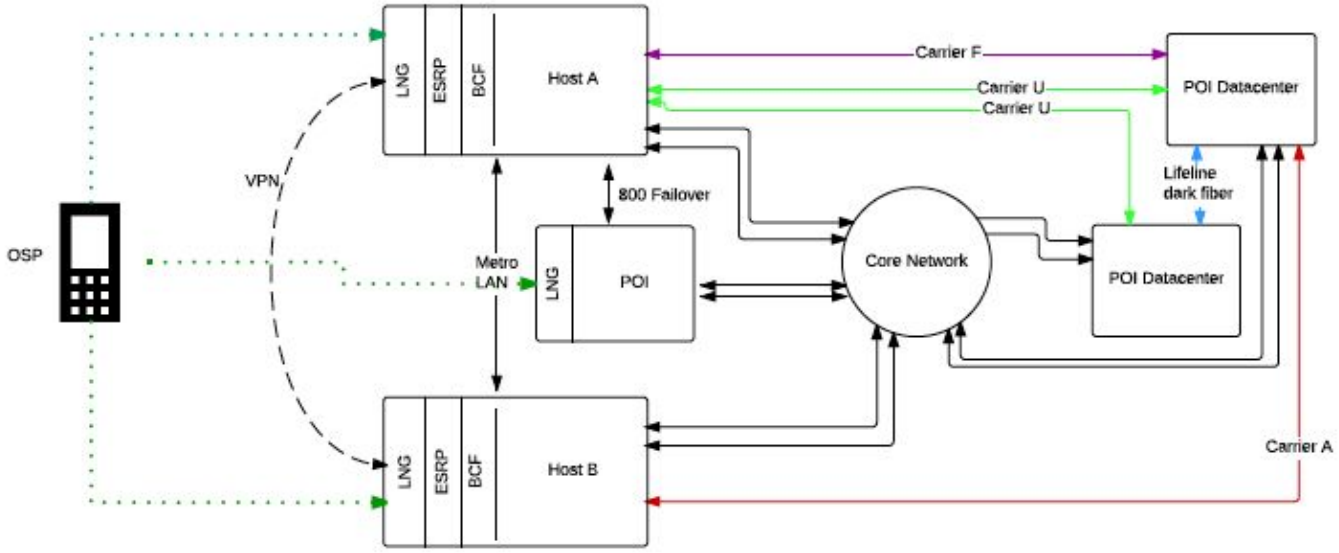
For example, INdigital may utilize two connections from a primary provider and a 4G modem at the PSAP to ensure provider and physical diversity. Each PSAP will be researched and analysed for the best suitable service providers as the RFP process continues.

2.4.11 NETWORK DEMARCATION POINT

Response: Comply

INdigital recommends an overall design to establish that creates demarcation points as close to the OSP or other ESiNEt as possible. For example, if all carriers are using an underlying provider to connect to the host, and that that one provider has a network outage, a single fault domain will cause an unnecessary outage.

By moving the POI to the edge of the ESiNet, INdigital can utilize a multi-vendor, multi provider, multi-path core to ensure delivery of the call. Below is an example network design that has been utilized in one of our other statewide ESiNets.



2.4.12 ACCESS NETWORK - EDGE SITE INTERFACE

Response: Comply

INdigital will provide Cisco 2900 series routers (or their equivalent, with a higher Alabama native content, i.e. Adtran of Huntsville, AL.) The Routers are modular, allowing for customized or additional interfaces as required by the PSAP installation.

2.4.13 TIME SERVERS

Response: Comply

2.5 ANGEN NETWORK FAILOVER

Response: Comply

As described throughout section 2.4, automatic failover is achieved by BGP and BFD OSPF routing protocols within the ESiNet.

Failover call routing from the originating service providers is completed by dual homing the 911 trunking to diverse and redundant ESiNet host sites. In addition to this, INdigital provides 800 failover call delivery for the OSPs to connect to the 911 network in the event of a trunking failure.

2.6 ANGEN NETWORK SECURITY

Response: Comply

As part of our IP network element design, edge and core router configurations use industry best practices for intrusion detection and mitigation. These include a number of provisions that can be made available for further review. Because of the possible public nature and competitive exposure of this response, we are refraining from a full listing of the type and methods of intrusion and security mitigation.

INdigital is familiar with and CJIS security protocols, and has provided transiting service for CJIS services in multiple jurisdictions. All employees that are in contact with these network elements have extensive background checks and are voluntarily tested for substance abuse. Additionally, the company routinely provides assistance to our customers related to internal investigations and specialized data analysis.

2.6.1 INTRUSION PREVENTION AND DETECTION

Response: Comply

See also our response in 2.6

2.6.2 ENCRYPTION

Response: Comply

2.6.3 NETWORK SECURITY STANDARDS

Response: Comply

These industry standards are all within the framework and capabilities of the network elements we have proposed in this response.

2.6.4 REMOTE ACCESS AND NETWORK SECURITY AND FIREWALLS

Response: Comply

Our response includes a provision for uses dual factor authentication for network access.

SECTION 3 ANGEN SPECIFIC REQUIREMENTS

3.1 SYSTEM SERVICE PROVIDER COORDINATION REQUIREMENTS

Response: Comply

The company has entered into many interconnection and commercial agreements in multiple jurisdictions, and currently exchanges ALi data with all the major providers in the US. Copies of redacted agreements are attached in the appendix to this agreement.

With regard to the CBT agreement listed in the RFP, our records consist of some sketchy notes taken by Rick Powers that have a grease stain from Don Kiely's lunch on page 2. We highly recommend the Frisch's Big Boy next time you are in town.

3.2 INTERSTATE INTERCONNECTION REQUIREMENTS

Response: Comply

INdigital has identified the selective router locations within the neighboring states for interconnection and delivery of transferred wireless calls. Bi-directional trunking will need to be established with these out of state selective routers to facilitate network to network transfers, and interagency training and coordination of these types of interlocal agreements is one of our company's specialities.

In addition to trunking, wireless pANI ranges will need shared between each 9-1-1 system service provider to facilitate the transfer of additional call data between the PSAPs. Some normalization of pANI ranges between the OSP's their third party providers and the 911 system service providers may be required if there are overlapping ranges.

INdigital believes that establishing connections to these selective routers from the ANGEN network is the most cost effective solution.

3.3 TEXT TO 9-1-1 REQUIREMENTS

Response: Comply

INdigital is a TCC and text aggregation gateway (TAG) provider. INdigital does not recommend the use of TTY for text-for-911. We support web browser platforms, or SIP MSRP protocols directly to PSAP CPE.

In this response, INdigital will act as a service aggregator for the ANGEN network, providing redundant resilient connections to the originating service providers.

INdigital's text-for-911 platform services will be supporting the transfer of text sessions between answering positions. This feature is expected to be deployed early Q2 2016 with general availability. Lab demonstrations are available today.

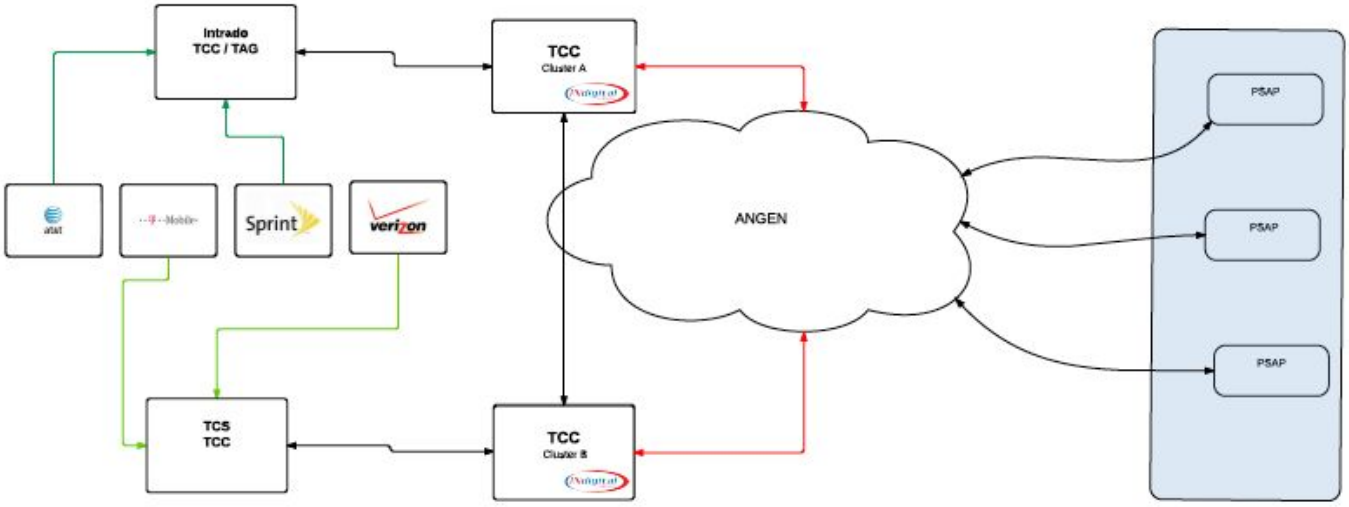
The solution is compliant with the ATIS J-STD-110 standard and all subsequent updates to the standard.

3.3.1 DATA COLLECTION AND REPORTING

Response: Comply

Host site connectivity will be established in a redundant configuration to the INdigital TCC's. We recommend utilizing dedicated circuits as the primary delivery from the TCC to the ANGEN host sites.

In addition, we would establish VPN connectivity from the ANGEN Host TCC's to the carrier specific TCC's as secondary delivery method.



INdigital also provides a text to 911 MIS package. This system provides complete history of text to 911 messages and location data.

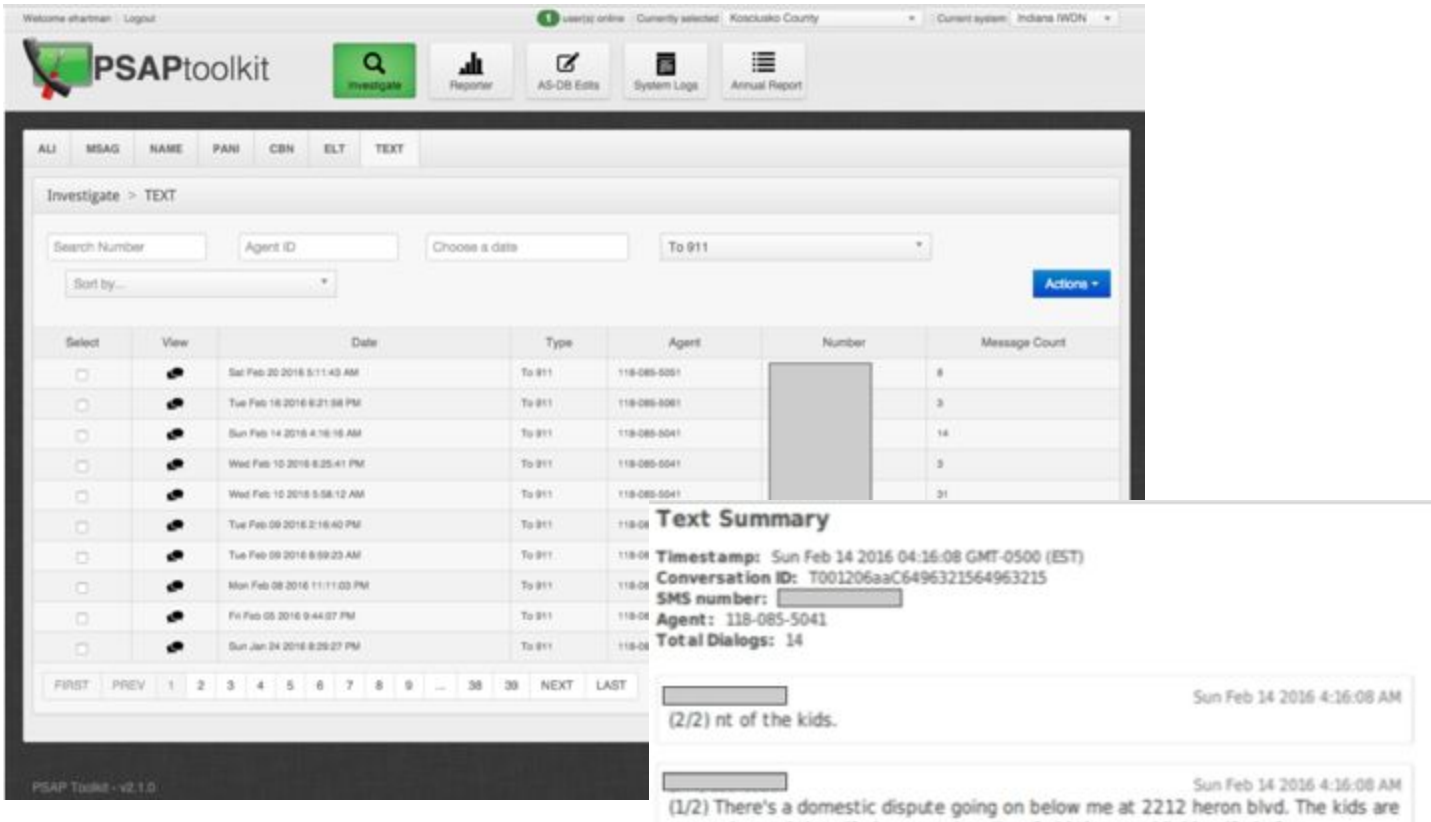


Figure 6, above: an example of a text message history inquiry screen

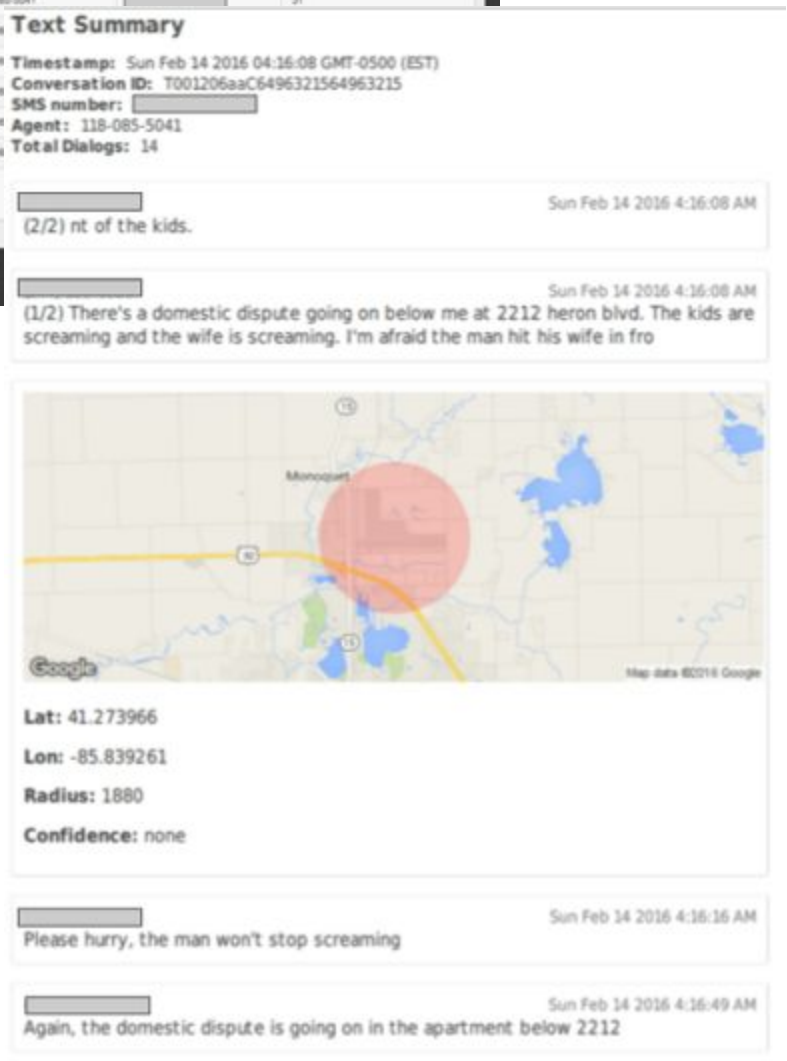


Figure 7, at right: an example of a logged text message session from the hosted text-for-911 service platform

3.3.2 PSAP GRAPHICAL USER INTERFACE AND TEXT STATUS WINDOWS (BROWSER METHOD)

Response: Comply

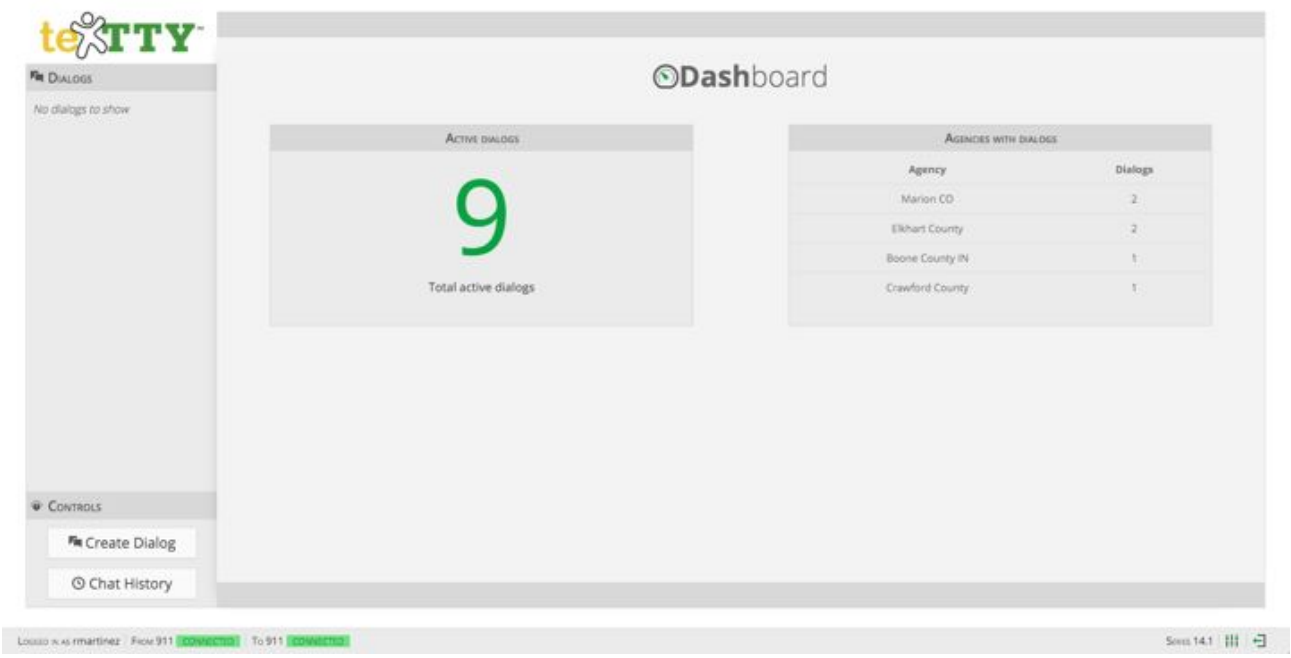


Figure 8, above: Example of active text sessions with one session on hold

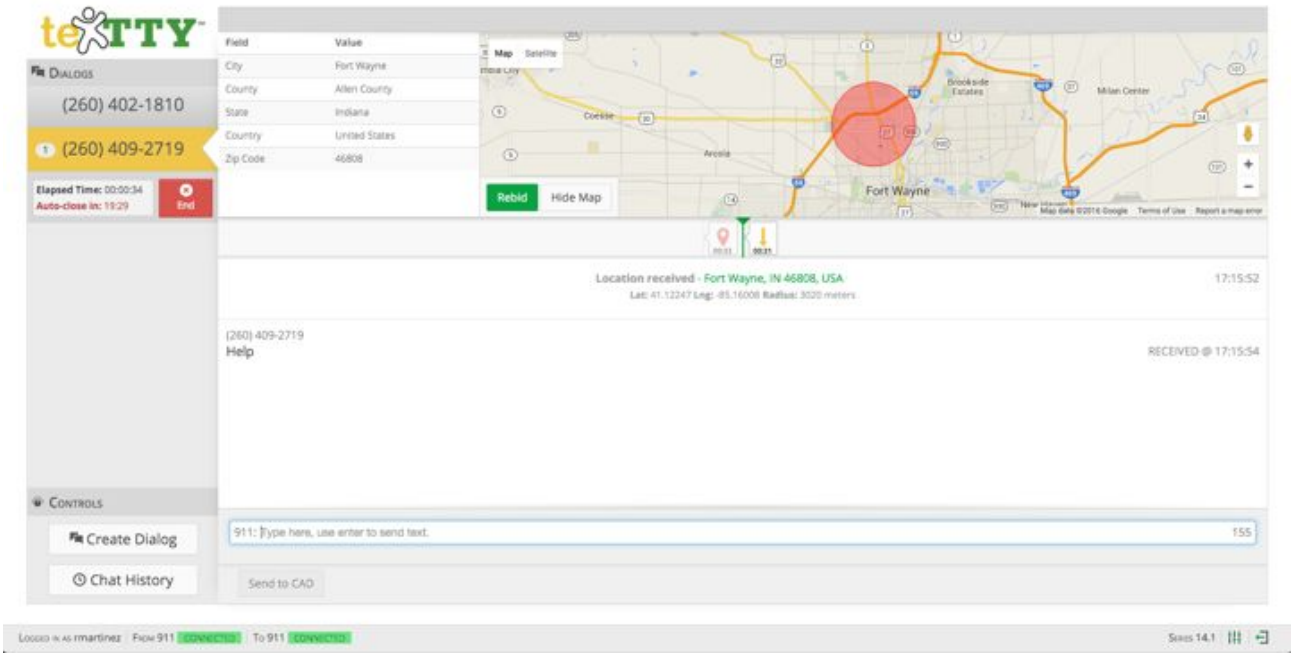


Figure 9: Example of active text-to-911 session

SECTION 4 ANGEN i3/NG CORE SERVICES REQUIREMENTS

4.1 NENA I3 NG CORE FUNCTIONAL REQUIREMENTS

Response: Comply.

INdigital is responding with an Alabama based hosted solution. Based on the statements in the RFP, INdigital believes that the current data centers in Birmingham and Montgomery are adequate. We have also identified other datacenters in Huntsville and other LEC locations that may need to be considered, depending on POI requirements and the final network design.

INdigital will be providing Functional Element and legacy transition services and FEs for this project. While most will be utilizing software created and maintained by INdigital directly, we will also utilize systems from industry leaders Adtran, Cisco, Dell, Audio Codes, and Data Master.

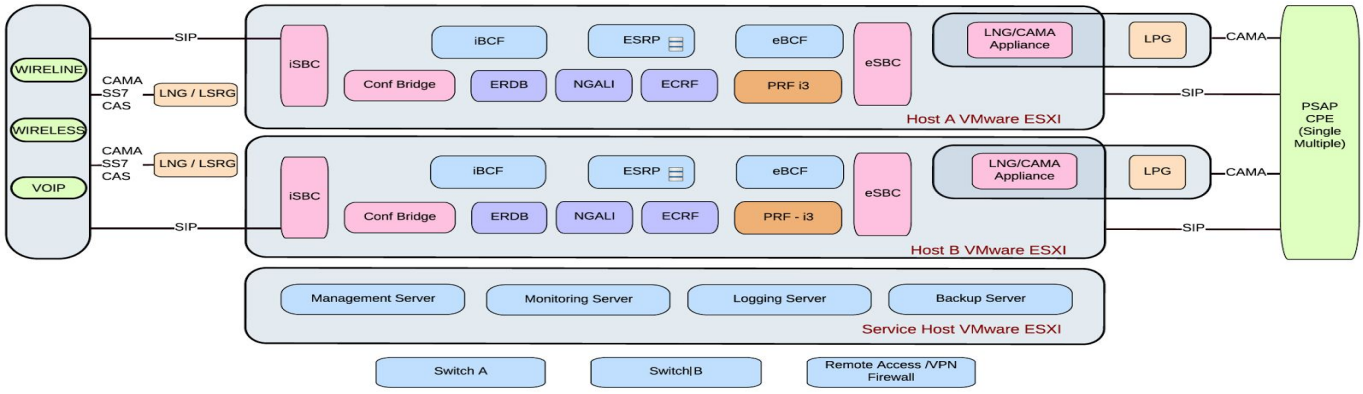


Figure 10, above: NG core elements of the i3 network

INdigital makes extensive use of Virtual Machine (VM) architecture for core FEs. These are deployed on high availability vmware host systems. The system block diagram shown above represents a typical redundant host configuration.

Duplicate platforms are at the "A" and "B" host sites and operate as a redundant geo-diverse system. Both host sites are configured in a active/active state and capable of processing all of Alabama's 911 traffic in a catastrophic failure scenario.

All of the legacy and i3 call processing is handled by INdigital provide technology, providing one throat to choke for design, implementation, operation and software or hardware problem resolution.

- Ingress FEs
  - Legacy Network Gateway (LNG) and
  - Border control function (BCF)

INdigital's design approach is very flexible for the ingress FEs used in the ESiNet. For legacy connections we have proposed best in class legacy to IP conversion FEs that are commercially available off the shelf products. These include products from Dialogic, Oracle and AudioCodes.

In addition, INdigital supports multiple softswitch vendors for legacy landline service, including Taqua, GenBand and MetaSwitch.

- Core routing FEs
  - Emergency services routing proxy (ESRP)
  - Policy routing function (PRF)

These FEs have been created and refined by INdigital to provide the highest level of service possible. They are tightly integrated with all other FEs that are in the VM Ware platform, and support industry logging, recording and FE network element management.

- Egress FEs
  - Legacy PSAP Pateway (LPG)
  - Legacy Selective Router Gateway (LSRG)
  - Border Control Functions

These FEs are located at the edge of the ESiNet, and provide transition services between the ESiNet and legacy connection arrangements and E9-1-1 services. Many of the higher level protocols of these FEs are anchored to the INdigital ESRP, our SIP message engine (SIP:ME).

As also used on the ingress side of the ESiNet, security is provided by firewalls and the Border Control Functional element.

- Control plane Functional Elements
  - Emergency call routing function (ECRF)
  - Location Validation Function (LVF)

Because the ESiNet in this proposal serves a transitional role, these FEs are proposed for use as the ANGEN network moves toward a more evolved i3 environment.

INdigital is proposing the Datamaster LVF/ECRF product DataNexus platform to meet the needs of the advanced ECRF requirements highlighted in this RFP, and in recognition of the existing Datamaster platforms that are deployed in Alabama today.

DataNexus® is the most powerful LVF / ECRF on the market. Currently deployed in Texas, it already covers 85% of the State's population. This proposal would provide ANGEN with a single LVF / ECRF covering the entire State.

DataNexus is designed to integrate the current needs of public safety and emergency response with the evolving technologies of 9-1-1 Next Generation functions. DataNexus fulfills all the requirements for a Location Validation Function

(LVF) and Emergency Call Routing Function (ECRF). It utilizes the Location to Service Translation (LoST) protocol as described in IETF RFC 5222. It also complies with NENA's 08-003 v1 (i3 standard) and the yet unpublished NENA LVF / ECRF standard and the NENA Forest Guide standard.

The legacy MSAG will continue to serve a role as authorities having jurisdiction transition to an ECRF while GIS data is brought up to the level required for these functions. We have integrated our DBMS platform so that MSAG changes are automatically propagated to DataNexus for location validation and call routing. Other external platforms and i3 FEs are supported by performing regular MSAG file imports into DataNexus.

911 Datamaster also supports NENA's Transition Planning Considerations Document (NENA-INF-008.1) with regard to utilizing an LVF during the provisioning of a traditional ALI. The Datamaster DBMS platform can be configured to utilize the LVF functionality of DataNexus when processing incoming service orders. As GIS data replaces MSAG as the core source data, the DBMS process does not need to change. As part of the State's RFP process, we advocate the use of as many NG9-1-1 functions (such as LVF) into the traditional database during a transitional period.

DataNexus also uses U.S. Postal Service (USPS) data as an additional source for creating "aliases" at the community and street level. While USPS data by itself is not a reliable data source by 9-1-1 standards, it does provide additional means of identifying locations in terms that are generally known by the public you serve.

Some of the key features of DataNexus include:

- Allows data analyst to correlate street and community names from three data sources (Postal, MSAG and GIS)
- Allows authorized service providers to validate locations and route calls using real time data
- Integrated with 9-1-1 DBMS, DataBond and SpatialCentral
- Extensive reporting capabilities
- Identifies common error discrepancies between MSAG, GIS, and Postal
- Allows establishment of translations
- Integrates with other data sources
- Extensive online help
- Extensive security mechanisms allow access and updating tailored to most organizations' data operations
- Links to online mapping resources

4.2 BORDER CONTROL FUNCTION (BCF)

Response: Comply

INdigital utilizes BCF technology within our Functional Element equipment stack. We utilize ingress and egress BCF functionality to provide us complete call control. Each host site has redundant ingress and egress BCFs.

4.3 EMERGENCY CALL ROUTING FUNCTION (ECRF)

Response: Comply

Please refer to section 4.1

4.4 EMERGENCY SERVICES ROUTING PROXY (ESRP)

Response: Comply

The ESRP will be located within the ESiNet, with geographic diversity and logical redundancy. The PRF operates in accordance with NENA 08-003, and will provide PRF ruleset evaluation based on matching the next hop URI returned from the LoST ECRF routing query. The ESRP supports the NENA i3 standard SUBSCRIBE/NOTIFY Event Packages, which can alter a call delivery policy within the PRF ruleset.

INdigital's ESRP solution is a NENA i3 recommendation compliant product. INdigital is constantly evolving our ESRP to comply with the emerging NENA i3 and other applicable industry standards.

Once the call has entered into the network via SBC or LNG the ESRP Emergency Service Routing Proxy is where a variety of different routing technologies are utilized. ESRP will utilize multiple functional elements to make the best routing decision. ESRP will query the ECRF or ERDB to route to the intended agency. At this moment PRF function is invoked to determine what CPE is available or device is available to receive a call. PRF is customizable for each agency to make the best routing decision for each PSAP.

After a routing decision has been made the call handed through eBCF for the SIP and messaging to be normalized prior to delivery to the CPE. There are multiple variants of i3 in the market place. To support all types of equipment INdigital utilizes BCFs functions to make sure each manufacturer gets the best service experience.

We also support i3, SIP-T, LNG/CAMA and RFAI call delivery to all leading equipment manufactures currently in the market. Allowing PSAPs an opportunity to utilize ESi-NET resources on legacy equipment.

4.4.1 POLICY ROUTING FUNCTION (PRF)

Response: Comply

Currently PRF functionality is administered by INdigital using a technician OA&M interface, or by PIN codes from the MEVO disaster recovery platform.

In this proposal, INdigital is planning the release of an intuitive user interface (based on market demand) that allows real time manipulation of call routing policies. The user interface allows the operator to affect PRF thresholds to automatically reroute or manually manipulate alternate call routing.

INdigital calls this service 'Call Director' and the user interface is available from a distributed, highly available secure web interface. With graphical controls, an authorized user or other delegated party can change call routing and processing as defined in NENA 08-003.

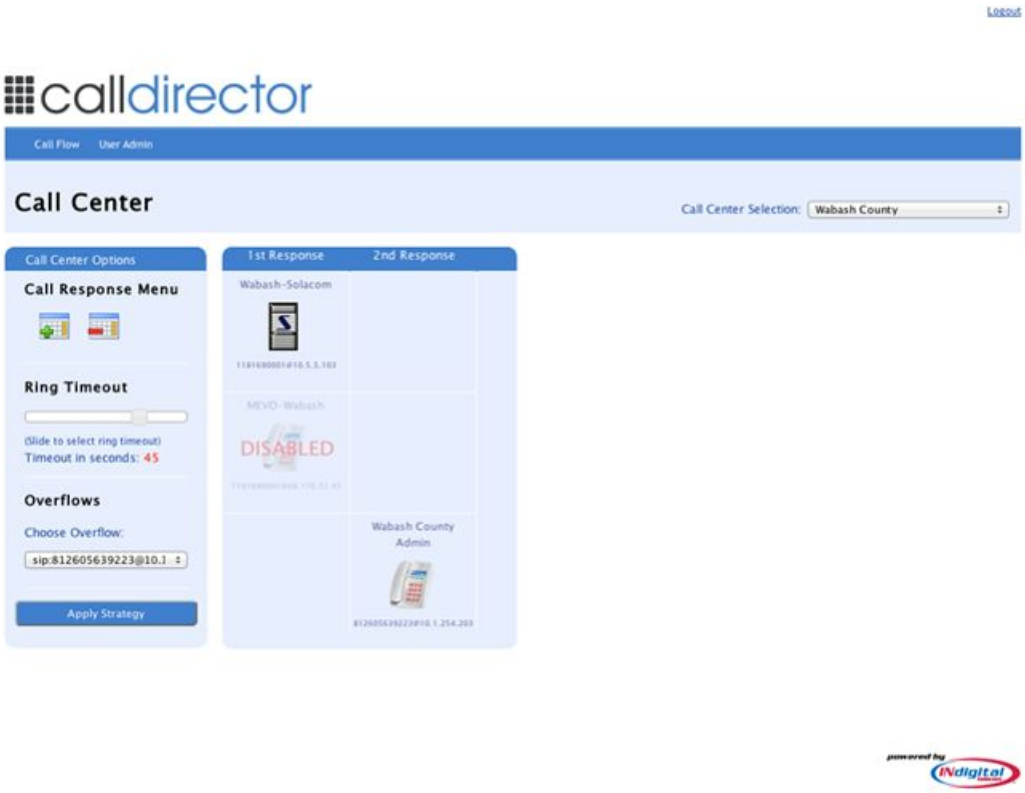


Figure 11, above: Example of policy routing function (PRF)

4.5 LEGACY NETWORK GATEWAY (LNG)

Response: Comply

INdigital's LNG is integrated to the ESiNet thru the BCF FE. The BCF additionally supports NIF and LIF functions for interworking with legacy protocols, such as CAMA and SS7. Specifically, all MSC / XLEC end office to selective router NENA variants are supported using compliant off the shelf interworking devices that support SIP-I or SIP-T.

INdigital's experience has indicated the need for a hybrid ALI to NG911 location interworking element that provides the remaining functionality (defined by NENA as an LNG function.) There are, however, possible patent infringement issues in the architecture prescribed by the NENA standard related to LIS services.

We have chosen to avoid this potential liability by simulating the LIS interface functions in another manner. INdigital's L2LIS (Legacy to LIS) functional element provides dereferencing from legacy data feeds or protocols and allows seamless integration between legacy tabular and location based routing.

4.6 LEGACY PSAP GATEWAY (LPG)

Response: Comply

INdigital uses common off the shelf gateways to provide legacy TDM interfaces connecting to a legacy PSAP. INdigital's NGALi platform provides the transitional functions of the LPG (as yet undefined by NENA), supporting a legacy ALi interface to interoperate and dereference NG911 locations when needed. When combined, these two elements create a logical equivalent to the LPG as set forth in the NENA i3 recommended standard.

In addition, INdigital fully supports other industry standards such as the ATIS RFAi protocol via direct IP integration (technically classified as an LPG FE).

4.7 LEGACY SELECTIVE ROUTER GATEWAY (LSRG)

Response: Comply

INdigital's LSRGs are deployed in a number of different configurations. They provide full interoperability by translating SIP signalling protocols to legacy SS7 (and other formats, such as PRI). Combined with our NGALi platform, this provides full support for NCAS, as well as support for calling party category (CP-CAT) SS7 ISUP parameter used by 5ESS and DMS legacy switching platforms.

In combination with full support of various industry data protocols by the NGALi platform (such as ESNNi, ALISA, PAM, and E2+,) the SIP:ME platform provides full interoperability and integrated support for i2, i3 and all other NG protocols.

In this way, the LSRG and supporting subsystems and FE's provide a nearly infinite number of configurations to support a transitional network.

4.8 LOCATION VALIDATION FUNCTION (LVF)

Response: Comply

INdigital will be utilizing the DataNexus application. It can typically respond to a validation request in less than 500ms and can operate with a transaction rate of 30 per second for an indefinite amount of time.

DataNexus (both LVF and ECRF) support iterative and recursive queries and will support the use of a National Forest guide if/when that becomes available.

4.8.1 LOCATION SERVICES

Response: Comply

INdigital has developed LIS technology such as nLIS or network LIS services. The nLIS FE operates as a gateway for devices as well as legacy 3rd party location providers.

The nLIS gathers the location from the 3rd party providers for Phase 1 and/or Phase 2 location information. If location information is provided, the call is routed via i3 protocols.

If for whatever location data is not provided, the ESRP is also loaded with a legacy ERDB, and the ESRP FE will make a legacy based routing decision on ANI or pANI information.

4.9 LEGACY DATABASE SERVICES

Response: Comply

INdigital will be utilizing the Datamaster DataBond application.

DataBond is an evolution of 9-1-1 ALI. It can serve as a 'Location Database' (LDB), which is defined by NENA as a data structure that can serve as both an ALI and a LIS operating within a 9-1-1 authority's jurisdiction. Since DataBond integrates with both existing and NG9-1-1 infrastructure, it allows for the migration to NG9-1-1 technology within the project schedule without the need for a 'fork lift' upgrade. Our innovative software facilitates a migration mechanism of both data and business

processes, making the transition a flexible, yet controlled, evolution. DataBond supports current and future versions of location validation, emergency call routing and location-based call routing.

DataBond consists of database and database management software. It provides request / response and is compatible with all leading ANI / ALI controllers as well as NG9-1-1 components such as Legacy Network Gateways (LNGs) and Emergency Service Routing Proxies (ESRPs). Our software can provision customer location data manually and in batch.

Some of the key features of DataBond include:

- Microsoft™ Server-based for ease of use, lower cost and easy maintenance
- Encompasses all of the specifications for 9-1-1 ALI and LIS
- Supports IP communications with controllers and PSAPs
- Supports HTTP Enabled Location Determination (HELD)
- Meets NENA ALI Query Service (AQS) Standard
- Meets J-STD-036 and E2+ cellular standards
- Interfaces with 9-1-1 DBMS software for ALI / LDB updates
- Supports replication with remote LIS implementations
- Scalability from less than one thousand to more than 50 million records
- Provides ALI response to multiple PSAP controllers
- Provides five call history-input and store details about a particular phone number
- Simple or advanced password protection and user login auditing
- Automatic synchronization of records on two Servers for full redundancy and reliability
- Maintains logs of call activity and imports and selective router updates
- Automatic status notification via pager, email, TL1 and SNMP
- Supported by 911 Datamaster's comprehensive, 24/7/365 software support

DataBond supports important standards such as:

- NENA 02-011: Data Standards for Local Exchange Carriers, ALI Service Providers & 9-1-1 Jurisdictions
- NENA 02-015: Standard for Reporting and Resolving ANI/ALI Discrepancies and No Records Found for Wireline, Wireless and VoIP Technologies
- NENA 04-005: ALI Query Service Standard
- NENA 57-501: Wireless Phase I & II Features and Functions Information Document

4.10 DISASTER RECOVERY / BUSINESS CONTINUITY

Response: Comply

See also our response in section 2.2.

Fail safe routing: INdigital recommends the use of '800' fail safe alternate routing for landline and wireless call classes as a refinement of a CSRIC IV best practice.

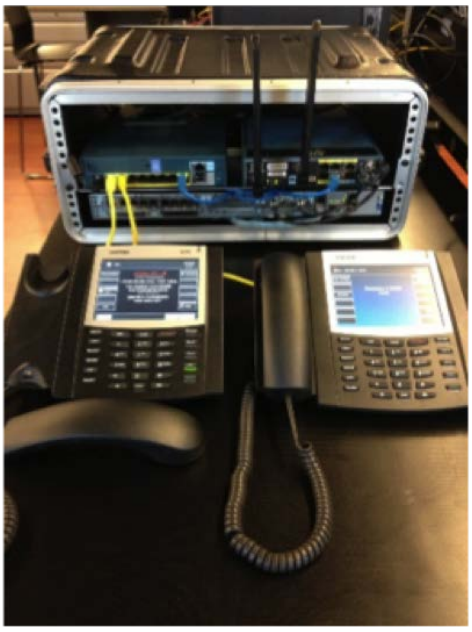
If OSP's have a network impairment or other unexpected call delivery problem that prevents them from using their dedicated 911 trunks to forward 911 calls to the ANGEN NG911 system, this approach further diversifies and ensures ingress to the ESi-NET.

Disaster recovery and call delivery: We also provide a Disaster recovery solution called MEVO. This core platform operates on the output (egress) side of the ESiNEt.

The INdigital ESiNET enabled MEVO system allows for 9-1-1 calls to be routed to a low cost touchscreen VOIP phone. This is a system that is not associated with the administrative phone system or CPE call taking platform. 911 calls are routed by the core FE's of the ESiNet, ensuring service availability if even a single plane or domain of the ESiNet is operating.

The MEVO phone requires much less bandwidth to operate than traditional 9-1-1 systems, allowing for the system to be deployed on consumer grade IP connections such as cable, DSL, local fiber, satellite or 3G/4G wireless networks.

MEVO also provides an enhanced level of 9-1-1 functionality critical to primary or secondary PSAP operation. These features include display of location information, rebid, call back, instant recall, and call history tools. All MEVO platform calls are recorded in a central voice and processing logging system, ensuring continuity of evidence custody - even during a network event or incident anywhere in the ESi-Net.



These tools allow a full functionality for a dispatcher to "operate as normal" while using the backup system. MEVO is also ideally suited for secondary agencies and command center configurations. We further propose that this service platform is a significant improvement of service for PSAPs in the county.

The picture (at left) shows a crash-kit configuration with a built in LTE 4G router.

As a reference point, the Indiana State Police (which operate as a secondary agency) use a customized MEVO platform as their primary call taking platform. MEVO has an attractive price point, and is easily integrated into operation protocols.

Figure 12 - above, micro MEVO disaster recovery 4g kit

SECTION 5 SYSTEM REPORTING and i3 LOGGING REQUIREMENTS

5.1 REPORTING AND DATA COLLECTION SYSTEM REQUIREMENTS

Response: Comply

ECaTS Assumptions:

The ECaTS reporting platform can provide all call handling and network reporting requirements as described by the Alabama 9-1-1 Board and contained within this RFP. ECaTS makes the following assumptions with answers to all required sections:

An i3 based ESINet is in place, statewide, and can send logging messages to the ECaTS i3 Meta logger.
ECaTS (its data collectors) will reside on the same network as the CPE and ESINet functional elements to ensure the ability to collect data from all systems.

All call handling equipment is able to provide either an i3 based call handling log or a CDR output
CDR output is assumed to contain operator/agent data in addition to all call handling fields (ex: seizure time, ring time, answer time, etc.)

The systems on the ESInet that provide i3 logging output are conforming their log output to the Detailed Functional and Interface Specification for the NENA i3 Solution, Stage 3 Version 1.

Product Overview

ECaTS is an acronym for Emergency Call Tracking System. ECaTS is the first enterprise wide 911 Call Reporting and Data Collection System that leverages the ubiquitous nature of the Internet to provide secure, real-time reporting to the 911 industry. ECaTS is currently installed and in production throughout the States of California, Utah, Oregon, North Carolina, Indiana, Kansas, Delaware, parts of Texas, Florida, Kentucky, Oklahoma, Colorado, Virginia, Louisiana, Mississippi, Tennessee and Washington. Currently ECaTS provides full analysis and reporting of all 911 call/events, call taker and trunk activity throughout these States. Pending available data feeds from the CPE, the ECaTS system has the capability to support Next Generation 911 activity and statistics that can listen, record and translate NG9-1-1 events.

The Alabama 9-1-1 Board and PSAP personnel should expect to enjoy the benefits of a flexible and intuitive web based user interface, easy to use pre-configured reports, and the advanced offerings of the ad-hoc reporting tools. ECaTS provides users with the ability to report on 911 call statistics and trunk statistics across an individual PSAP, county, any given jurisdiction and/or statewide with unified reporting and managed services. ECaTS has the ability to report on all calls captured by the raw Call Detail Records (CDR) from the Customer Premise Equipment (CPE). ECaTS can be accessed by any authorized user from a web

browser. Clients access their reports directly from a PC, Laptop or any mobile device such as iOS, Android or Windows based systems.

ECaTS Features

This section of the document provides the Alabama 9-1-1 Board with a high-level description of the product's key features. In essence, ECaTS provides the first universal 911 call statistics product that can transparently report all intelligence related to 911 call/event handling and volume across an individual PSAP, county, any given jurisdiction and/or statewide regardless of the Customer Premise Equipment (CPE) at the PSAP.

Intuitive Reporting Module

ECaTS was built on the concept of simplicity. Its reporting module, the heart of the application, provides the user with simple, intuitive click reporting options. Authorized users are able to generate near real-time statistics by simply selecting the report, the timeframe and a PSAP (or collection of PSAPs) to be used in the report. The system then accesses the back end servers to render the report directly to an Internet browser.

The beauty of the application is that authorized users may pull information from one PSAP, County or any given jurisdiction with the same level of simplicity. The drastic complexity of pulling information from different types of CPE manufacturers, installations or software versions located at each PSAP is completely eliminated by ECaTS.

The diagram on the following page represents the ECaTS Interface.

ECaTS Interface

Generating a report is as simple as selecting the report on the left, select one, multiple or a PSAP group, selecting a date range and clicking on the Generate Report button. The Group selector is completely user created and maintain so that County Administrators may define commonly used group of PSAPs against which they normally generate reports. The user may also decide what type of graphical representation they wish to include in the report and if they want the output to be web based, PDF or directly into an Excel file for further analysis.

Pre-Configured Reports

Many of the reports usually generated by PSAP Managers tend to seek the same level of statistical data. Information such as Call Summary Reports, Number of Calls per Hour, Top 20 Busiest Hours, Call Duration and other popular reports are

easily available to the users upon logging into the system. If the report contains data for multiple PSAPs, the information can all be aggregated into one individual report. Historical trending takes a whole new meaning when a user can generate 911 Call Statistics for their jurisdiction during an entire year with just a few clicks of a mouse.

ECaTS includes the following preconfigured reports:

Standard Reports

Call Summary Report
A listing of all of the calls answered and abandoned by call type (e.g. "9-1-1" or "10 digit emergency") for each day of the selected time frame.

Calls Per Hour Report
A listing of the number of calls delivered to the CPE controller each hour of each day for the selected time frame.

Top Busiest Hours Report
A listing of the top 20 busiest hours for any selected timeframe which includes the call count and average call duration for the selected period.

Average Call Duration Report
A listing of the number of calls each hour during the selected time frame with the queue time (average duration from trunk seizure at the PSAP to ring start, also known as Set-up Time), ring time (average duration from ring start to answer time, if equipment provides the required Ring Event), hold time (average duration calls are on hold during that hour), and talk time (average duration from answer time to disconnect time minus any hold time that occurred during the call, this is a pure talk time metric).

Calls by Circuit Report
A listing of the number of calls received on each circuit each day during the selected timeframe.

Circuit Utilization Report
A statement of the percentage of time that a given number of incoming trunks were engaged at the same time within each trunk group (trunk groups are defined by each PSAP). This report provides statistics on trunk groups allowing management to identify trunk groups that are over or under trunked.

PSAP Answer Time Report
A statement of the number of calls that were answered in 10 seconds or less, 20 seconds or less and other answer times for each hour of the selected timeframe. The summary information includes the number of calls in each answer time

category and the percentage for each category. Answer time is computed between Call Seizure and call Taker Answer times.

PSAP Call Taker Ring Time Report
CPE Equipment that provides a ring time event will be able to measure call taker ring time by measuring the time between the ring event and the answer event. For the equipment that does not have this event, a false ring time factor can be introduced to simulate a single ring (usually 2 seconds) or if this is not used this report would match the PSAP answer time and measure from seizure to answer.

Last 12 Months Answer Time Report
Provides summary information for each month within a 12 month period including the number (and corresponding percentage) of calls answered in 10 seconds or less.

Last 12 Months Call Taker Ring Time Report
The Last 12 Months Call Taker Ring Time Report gives the total number of inbound, parsed calls for the last 12 full months from when the report was generated. This report, similar to the PSAP Call Taker Ring Time Report, utilizes ring times, calculated from when the call is presented to the call taker to when the call is answered (meaning that there is no set up time included in the calculations). This report provides the percentage of calls with ring seconds between 0 and 10 as well as the total number of calls answered within 10 ring seconds, per month.

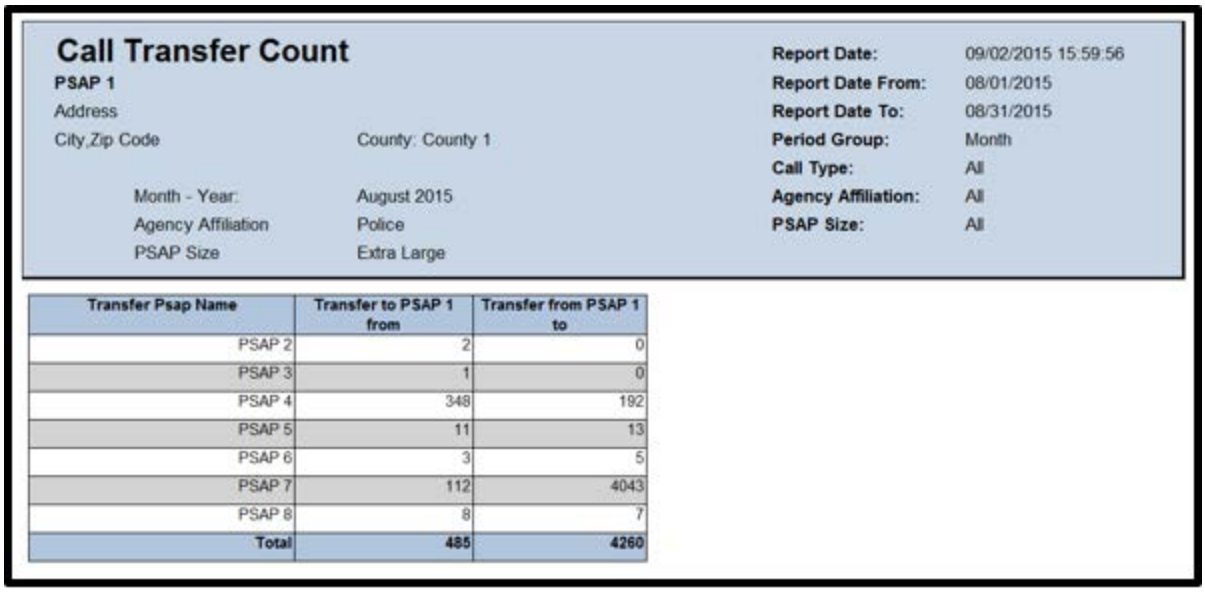
Class of Service Report
A listing of the number of calls for the selected timeframe broken down by a selected subset of classes of service from the ALI data string such as business (BUSN), residential (RESD), Centrex (CNTX), PBX, pay phone, VoIP, or wireless phase 1 WPH1/W911) or phase 2 (WPH2).

Call Initial Station Total Calls Report
A listing of the number of calls received each hour at each answering position during the selected timeframe. Requires the source data to include the station identifier for each answered call.

Call Transfer Report
Provides details regarding every call that was transferred to or from the PSAP during the selected timeframe. Details include ANI information, trunk seizure time of call(s) at each PSAP and other relevant call information. All PSAPs must be participating in the ECaTS program to show up on the Transfer report, any secondary that is not in the ECaTS system would not appear in this report. In order to maximize call transfer report accuracy, all participating PSAPs must synchronize their system clocks with an industry standard network clock service or device. In addition, this report provides PSAP-to-PSAP transfers and does not include internal station-to-station transfers.

Call Transfer (Summary) Count Report

The Call Transfer Count report provides the user with counts for every transfer to and from the selected PSAP for the date range chosen. The report uses the same rules to determine transfers as the current transfer report.



Call Transfer Count

PSAP 1
Address
City,Zip Code
County: County 1

Month - Year: August 2015
Agency Affiliation: Police
PSAP Size: Extra Large

Report Date: 09/02/2015 15:59:56
Report Date From: 08/01/2015
Report Date To: 08/31/2015
Period Group: Month
Call Type: All
Agency Affiliation: All
PSAP Size: All

Transfer Psap Name	Transfer to PSAP 1 from	Transfer from PSAP 1 to
PSAP 2	2	0
PSAP 3	1	0
PSAP 4	348	192
PSAP 5	11	13
PSAP 6	3	5
PSAP 7	112	4043
PSAP 8	8	7
Total	**485**	**4260**

Call Transfer Count Report

Calls by Operator

The Calls by Operator report allows a user to identify how many calls have been answered by particular users logged into the system. This report is generated by CDR output to the RDDM. If user information is not available for a particular call, information will be directed to an "Unknown Operator" row. This category is used in any situation in which an operator name is not provided with the call, this often occurs when CDR data considers a call abandoned. This report divides the calls received in a given time frame by operator name and hour of day in military time.

Operator Speed of Answer

The Operator Speed of Answer report allows a user to identify the speed with which individual operators are answering calls. This report is generated by the CDR output. If the operator name information is not available for a particular call, calls will be directed to the "Unknown Operator" row. This report is divided into separate answer time frames. The report also will identify the total calls answered as well as the average duration of the calls in seconds.

Calls per Hour by Day of Week

The Calls per Hour by Day of Week report lists the number of calls for each hour of the day, by day of week (increments also apply). Depending on the call type selected, the Calls per Hour by Day of Week report will conform to the available

data. The report also features a row with the average number of calls per day of the week.

Top ESN Report
The Top ESN report will provide frequency information on the Top ESNs for the date range selected. If multiple ESNs have the same number of calls, they will all be listed on the report. A total number of records and the average duration of those calls are also included on the report. This report will only support 911 Call Types because the ESN information will be pulled from the ALI of each call.

Top ANI Report
The Top ANIs report will provide frequency information on the Top ANIs for the date range selected. If multiple ANIs have the same number of calls, they will all be listed on the report. A total number of records included in the report, and an average duration of those calls is also included.
Graphical Capabilities
The product supports a wide range of graphical representations of the data being showcased in each report. Although the system will dynamically select the most appropriate graph type based on the data being reported, each user has the ability to change the graph type before the report is generated. Currently ECaTS supports line bars, pie charts, life graphs and stackable bars. Additional graphical support is currently being added to the application for the next version of the product.

Management Reports
In addition to the Call Statistics Report usually found in 911 MIS packages, ECaTS brings a wide range of Management Reports. These types of reports specifically address the analytical requirements of PSAP Managers across the industry. Management reports are available to selected authorization levels that provide tools necessary to identify areas and issues that require management attention.
ECaTS includes the following management reports:

Trunk Group Utilization Report
This report provides an in-depth analysis of call volume per trunk and trunk group. PSAP managers or coordinators can review and determine if PSAP trunks are being used at appropriate rates (e.g., are they hunting correctly, are they reaching capacity resulting in possible busy signals, etc.).

Answer time Exception Report
This report provides a clear scorecard of PSAP answering performance while clearly isolating those PSAPs that meet the National Emergency Number Association (NENA) 90/10 rule – 90 percent of the calls should be answered by each PSAP in 10 seconds or less. This report lists the PSAP(s) that answered less than 90% of calls within 10 seconds during selected time period.

Call Taker Ring Time Exception Report

This report lists the PSAPs where 90% of calls have a ring time of 10 seconds or less during selected time periods. If the selected PSAP(s) are answering 90% of calls within 10 seconds for the selected date range, the report will show 'no data available for specified date range'.

Outage Report

This report provides the ticket number for each data monitoring alert provided by the ECaTS system. This includes call records without ALI alerts, low call volume alerts, and heartbeat alerts. A high level user will have access to the ECaTS monitoring system, allowing the user to query based on ticket number. This offers an unparalleled level of transparency into the ECaTS ticketing system, providing to the user the ability to escalate and track tickets as desired. However, it should be noted that ECaTS tracks all outages to resolution, with notification to necessary parties as determined by the customer, regardless of customer use of this report.

10-Digit Emergency Call

A listing of the 10-digit emergency circuits that exceed a predetermined level of utilization as a percentage of total 9-1-1 and 10-digit emergency calls.

Unparsed Data

A listing of the raw data for each call that failed to meet predetermined business rules for a specific CPE manufacturer (i.e., raw data reflects disconnecting the call multiple times even though it is only answered once) or had a problem with the raw data which prevented it from being parsed (e.g., call record cut-off or interference in the data stream, causing corruption).

Wireless Routing Reports

Wireless Call Sector

The Wireless Call Sector report provides transfer information based on cell sectors for the specified date range. If a PSAP transfers 50% or more of their calls from a specific cell sector to the same destination PSAP, it will show up on this report.

Note: This report will include 9-1-1 calls, Administrative and any 10 Digit Emergency calls with ALI that meet the above requirements.

Wireless Call Sector
PSAP 1
Month - Year: April 2014

Report Date: 02/25/2015 14:49:37
Report Date From: 02/01/2014
Report Date To: 01/31/2015
Period Group: Month
Calls in Sector (>=): 1
% Transferred (>=): 20

Originating PSAP	"Transferred to" PSAP	Cell Sector	Telco	Total 9-1-1Calls	Total 9-1-1 Calls Transferred	Percentage of Calls Transferred
PSAP 1	PSAP 2	2345 CELL SECTOR AVE	TMOB	12	6	50.00%
PSAP 1	PSAP 2	123 EAST BL TOWER 0629 D1 S	SPPCS	10	5	50.00%
PSAP 1	PSAP 2	123 EAST BL TOWER 0629 D1 S	SPPCS	6	3	50.00%

Wireless Call Sector Report

Customization

The ECaTS portal along with all pre-configured reports and functionality are fully customizable. ECaTS was built on the concept of simplicity. The ECaTS system is fully configurable to adjusting reports based on the specific standards and efficiencies required by the Alabama 9-1-1 Board. Included in the ECaTS service are five (5) pre-configured reports in addition to the standard reports or forty (40) hours of development work, which ever come first. This provides our customers with initial customization at no additional cost. Please reference the Cost Proposal, for the development cost outside of the forty free hours of customization. As an option to the RFP, bundles of customization hours are provided to the Alabama 9-1-1 Board to give the ability to procure customization hours at wholesale costs as described in Attachment C, Cost Proposal.

Open Architecture

It should be noted that ECaTS is built using industry standard open architecture which ensures its ability to interoperate with other technologies including CPE vendors, Network Providers, Telecommunication Providers, Data and Voice recorders and others. Currently ECaTS provides multiple methodologies for interoperability from direct physical interfaces to more complex logical interfaces that leverage the i3 standards for collection, recording and storage of i3 events.

5.2 STATEWIDE STATISTICAL MONITORING

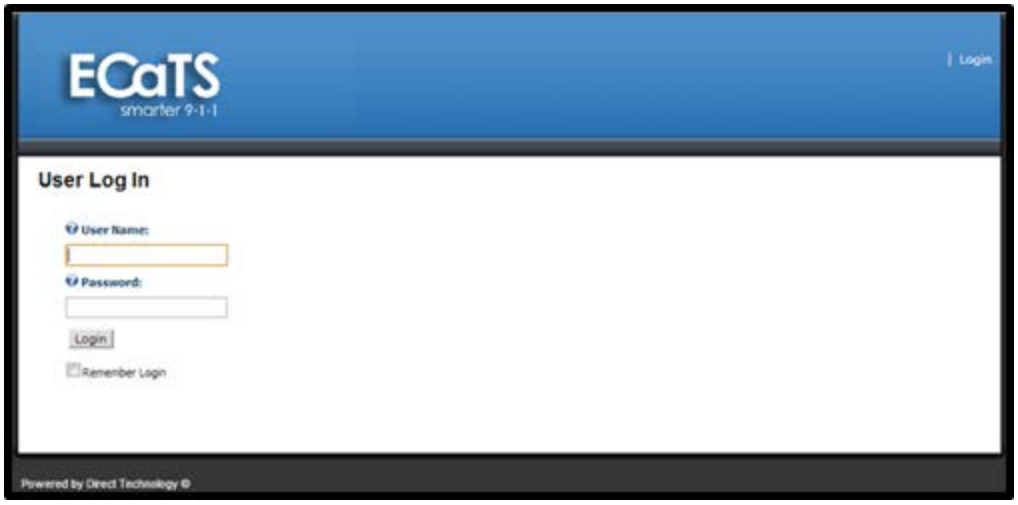
5.2.1 SYSTEM SPECIFIC REQUIREMENTS:

Response: Comply

Role Based Accessibility

ECaTS provides a secure user ID login and password based on each user's specific role. The system has the ability to enforce minimal password length and complexity as well as password changes.

The Alabama 9-11 Board will be requested to provide the assigned roles and responsibility per user in the ECaTS portal. ECaTS has the ability to add functionality and take functionality away based on a specific role. For example, a County Director's login will have access to all PSAPs within their county while a PSAP Manager's login will only have access to their specific PSAP within the County. ECaTS is only accessible via assigned usernames and passwords. Below is a picture of the ECaTS login screen:



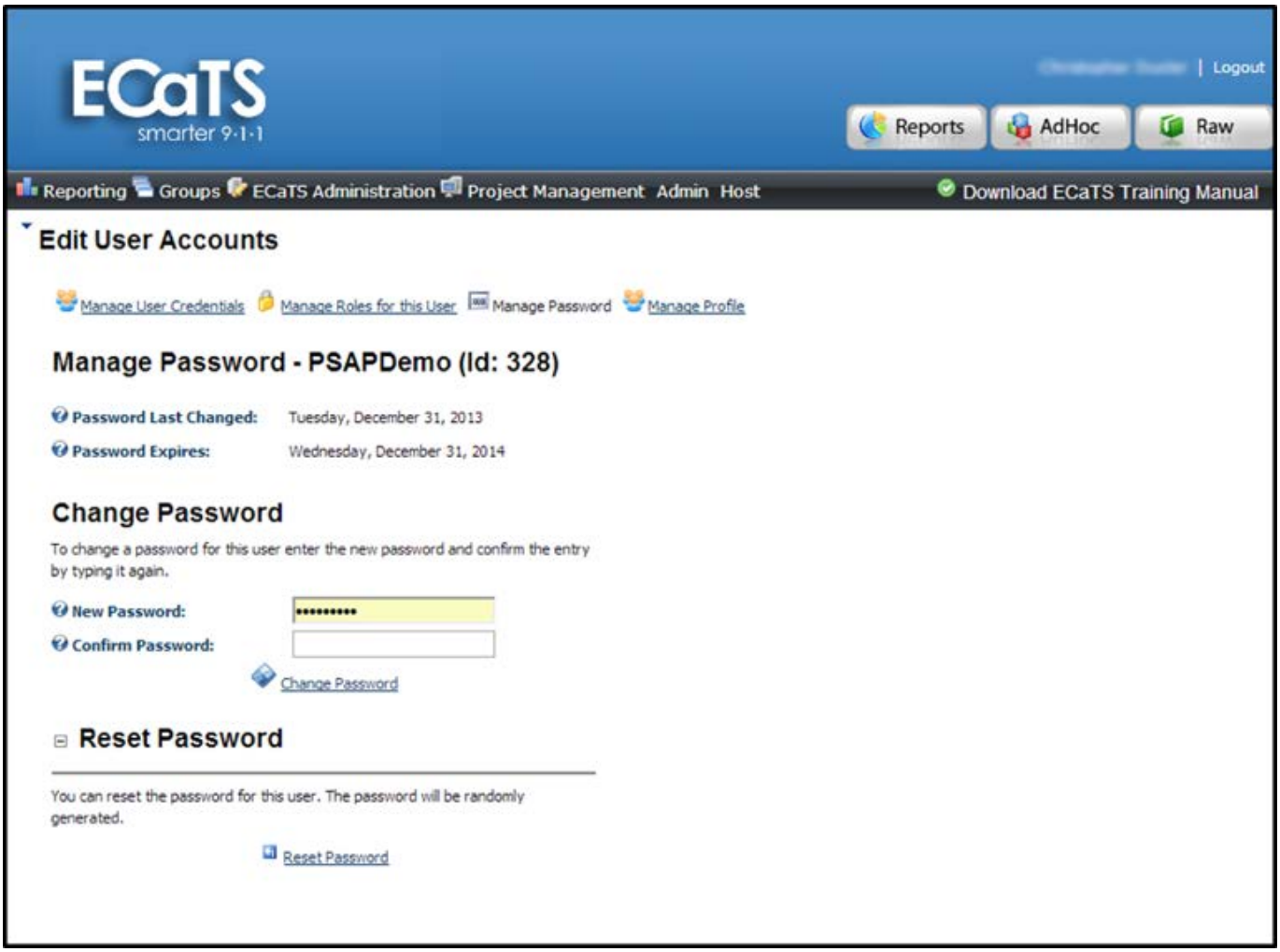
ECaTS User Login Screen

ECaTS reporting functionality is governed by 'roles' and 'PSAP groups' that determine which section(s), subsection, data and PSAPs each user may view/report on. The ECaTS system uses a custom Access Control List (ACL) used to associate individual users with particular functions and PSAP(s) that they can report against. Authentication is provided through a username/password combination required at the web site. Users have the ability to update their passwords and changes are required on a configurable rotation setting. Once authenticated, the user authorization occurs through a use of roles and user groups to assign the user to a particular reporting group and control what types of reporting the user is able to access (for example hiding management reports from a non-management users). Each action done in ECaTS can be logged by the platforms optional Audit Module (available for an additional license cost) which records all standard, ad-hoc and raw data views done by a user.

Password Management

ECaTS provides secure user ID logins and passwords with the ability to enforce minimal password requirements. ECaTS can be configured to require password expiration at any interval. The screen cap below, shows the password management

system and a note that the password is set to expire after 12 months. The Alabama 9-1-1 Board can choose any interval required of their security doctrines.



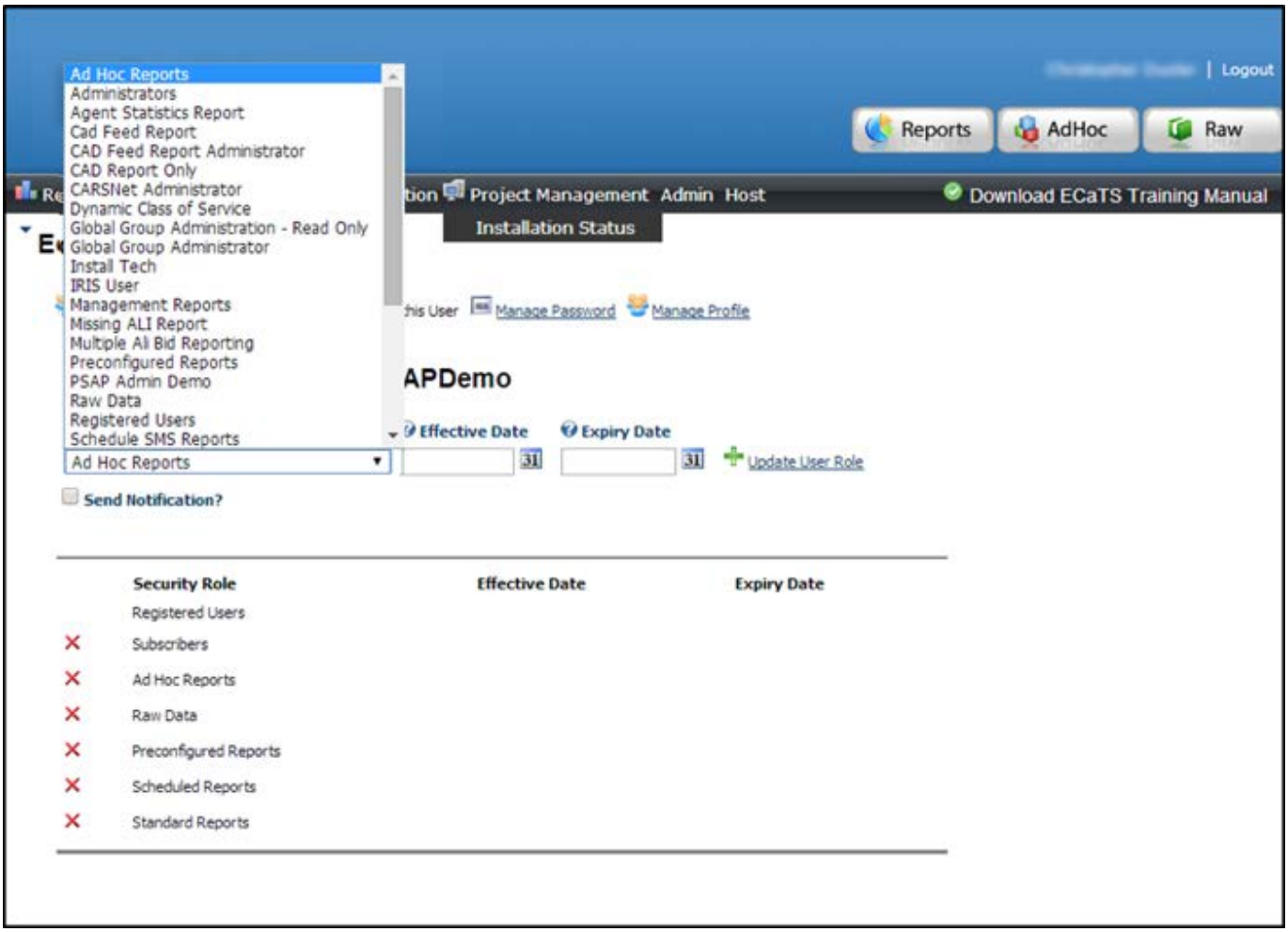
Password Management System

Requirements:

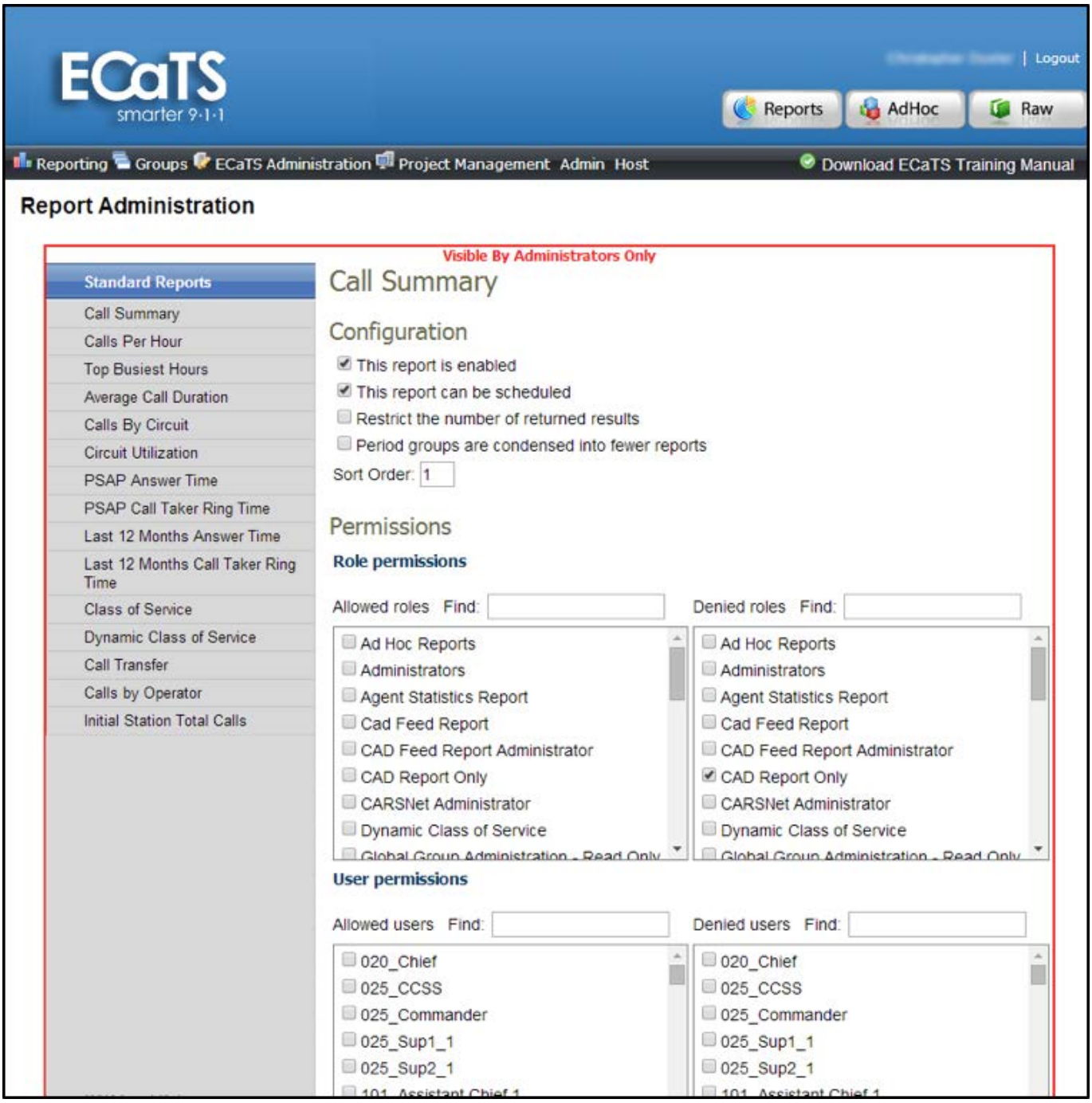
Allowing functionality to show only to certain users and not to everyone.
Allowing some users to have access to PSAP report information only.

ECaTS has the ability to show specific functionality to certain users and not to everyone based on their role. The ECaTS solution has a comprehensive role system that controls individual user access to various sections of the system. By adding/removing roles from users access to various parts of the system can be controlled. The screen caps below, shows the role system and a sample user with six reporting roles and a displayed drop down menu with more roles that provide additional system access and functionality. Additional detail in the screencap below shows the interface of the Report Access Control System which provides additional control over individual reports and the users/roles that can access the reports.

Combined; the role system and report management system provides administrative control to the report and function level as required by the State of Alabama.



User Role Management Administration

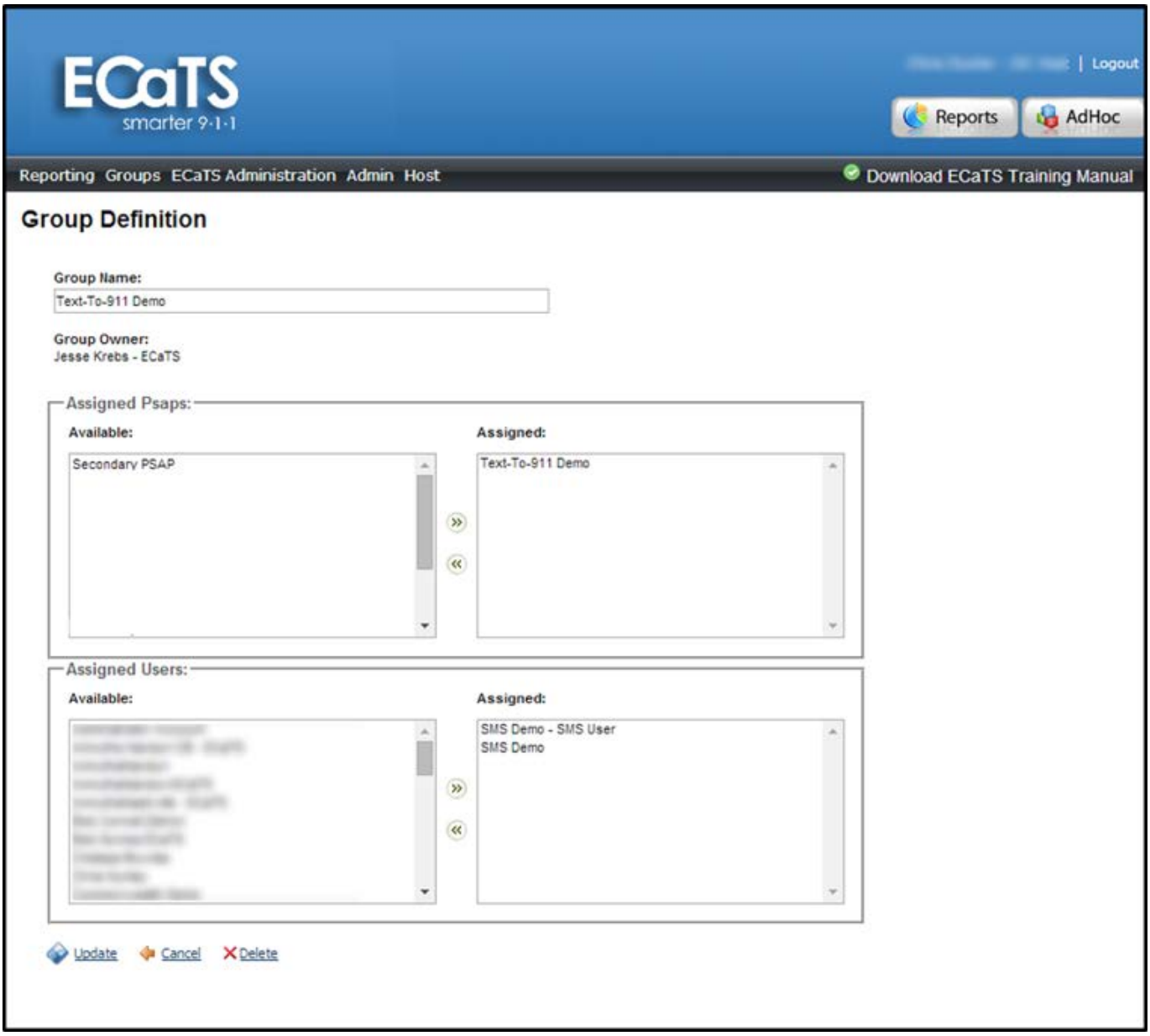


Report Access Control System

Requirements: Allowing statewide users to have access to reports for the entire State.
Allowing other users to have both PSAP and ECD Manager level access to report information.

ECaTS provides the ability for statewide users to have access to reports for the entire State while other users have both PSAP and County level access to report information. The screen cap on the following page, shows the ECaTS PSAP Access Group Management System. This administrative interface associates individual users with single or groups of PSAPs to generate reports on. Users can be assigned to either individual PSAPs or in a PSAP group that has more than one PSAP. Control

of which PSAPs the user can access are defined by the Alabama 9-1-1 Board and only those PSAPs the user has been approved for access will be available for reporting.



PSAP Group Access Management

Requirement: The proposed reporting and data collection system must allow scheduling of automatic report generation and delivery by email as attachments to one or more recipients in a format selected by the recipient.

Scheduled Reports

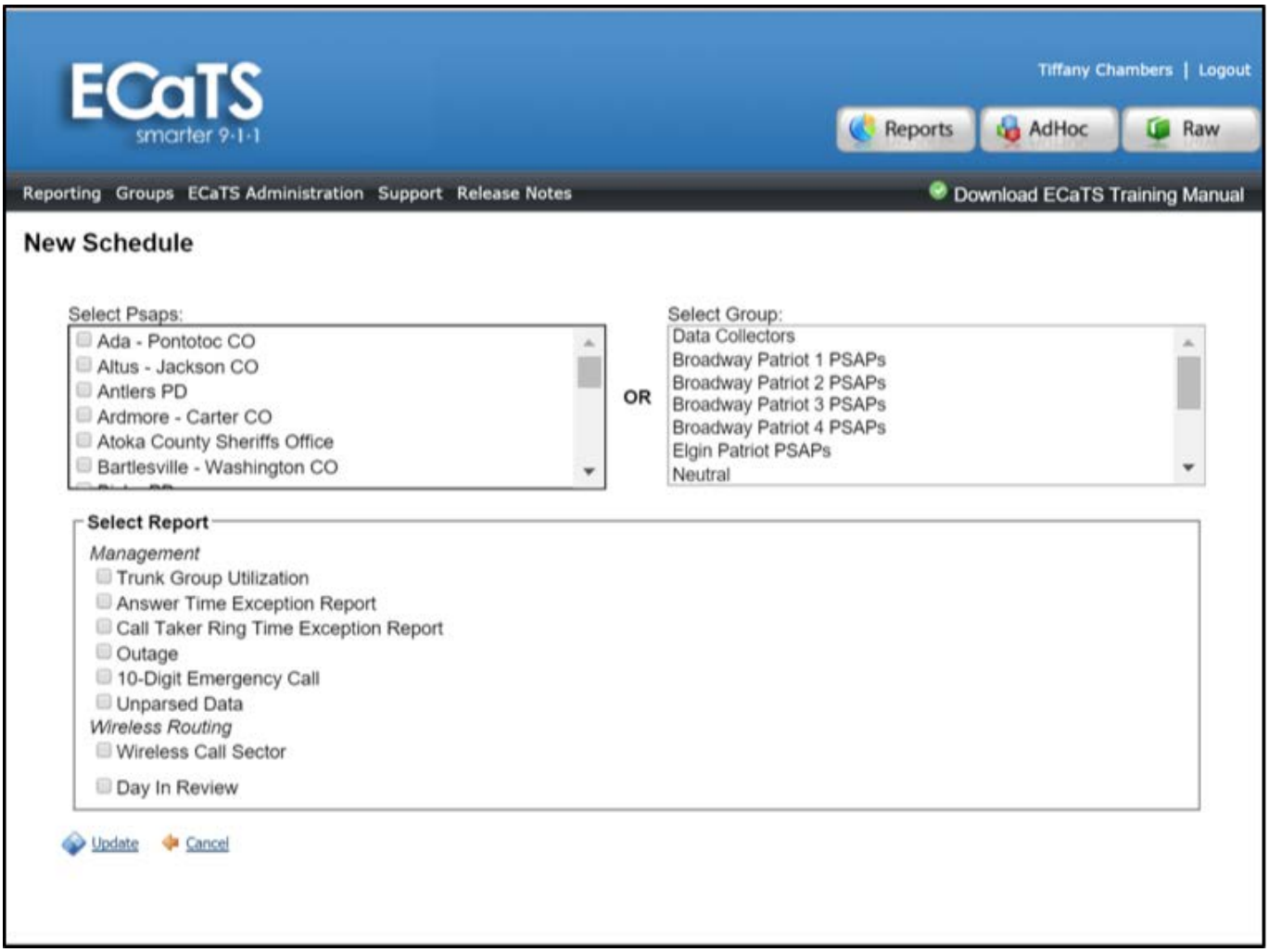
ECaTS users have the ability to schedule reports to be automatically rendered and sent directly to their email. Management level reports are available to specific

authorization levels on a regular or scheduled basis. Authorized users are advised via e-mail notification that monthly reports are available one or two days following the end of each month.

One scheduled report that has become quite popular with PSAP managers (and can be made available to standard users) is the "Day in Review" report. This report provides a snapshot of PSAP activity and is delivered to users via e-mail at the end of each day. The Day in Review report includes the following information for the day:

- Total Number of 911 Calls Received
- Total Number of 911 Calls Answered
- Total Number of 911 Abandoned Calls
- Total Abandoned 911 Call %
- Total Abandoned 911 Call % at Workstation
- Average Call Duration of the 911 Calls
- Statistics on PSAP Answer Time Performance
- Listing of the five busiest hours of the day and the number of calls each of those hours (911 Call Only)
- Listing of the five busiest hours of the day and the number of calls each of those hours (All Call Types)

Along with the Day-In-Review email, users can sign up through the ECaTS portal to have all or selected Management Reports scheduled to email as well. ECaTS has the capability to have both pre-configured and management reports scheduled and sent to the user, therefore eliminating the need to render reports daily unless needed.



Schedule Report Interface

Reports can be generated in the web-browser, in a PDF format, or Excel format. These reports can be saved, emailed, and printed in the user's format of choice and accessible by any ECaTS user based on their role anytime anywhere.

5.2.2 DATA CAPTURING REQUIREMENTS:

Response: Comply

Requirement: Ability to electronically capture and buffer Call Detail Records (CDR) for each individual PSAP.

Raw Data Collection and Access

Through the ECaTS Raw Data Viewer the user has access to all raw CDR records at their PSAP/PSAPs from the time of inception in electronic format. The CDR and ALI data is archived and stored at our datacenter for storing and reporting purposes, providing PSAP Managers with access to all archived data remotely online using the ECaTS web portal. By using the Raw Data Viewer portion of the interface, ECaTS

allows the users to pull Raw Data from any day and from any PSAP that the user has access into.

Here is an example of the Raw Data Viewer interface:

Raw CDR Viewer Interface

The reader should note, that all the CDR output is stored in its original format for auditing purposes. All the information, cradle to grave regarding calls, ALI and ANI results, etc. is stored as is and provided back to the user in the same chronological order as received by the buffering equipment.

Additionally, ECaTS allows the user to preview all generated reports on-screen before saving, printing or emailing. Once report parameters have been identified the user can select web, excel or PDF output types.

Data Collection

Requirement: Ability to securely capture call, text and operational data using a reliable capture method

The RDDM has been custom built by ECaTS to satisfy the rigorous data collection needs of the 911 call center. Each device is running a special custom software stack created by ECaTS which can run either on Linux or Windows based RDDM's. The software provides the capture, compression and storage of all the data and also transmits the data over a secure SFTP connection to the ECaTS cloud. Finally, the RDDM software has been specifically designed to maintain the captured data in its raw form and to only "store and forward" the data, not do any analysis or manipulation. In addition to capturing CDR, the RDDMs have the ability to connect to other devices such as ALI controllers, CAD systems, Network Devices, PBXs, etc. This flexibility allows ECaTS to collect and report on other data points should the State of Alabama require this at a later date.

ECaTS Text 9-1-1 Reporting

ECaTS provides text-to-911 reporting functionality and module. The ECaTS Text-To-9-1-1 reporting system is a CPE-SMS agnostic reporting system and provides reporting across all PSAPs in the ECaTS system. ECaTS offers twelve standard SMS reports which provide visibility into the number of total messages sent a received, the average time to respond between caller and call taker, tracking of the top MDN's to isolate SMS abusers and full Text-to-9-1-1 transcription, just to name a few. Similar to other ECaTS systems, the twelve standard SMS reports can be augmented with customizations that improve the overall SMS reporting value to individual PSAPs if the standard set do not meet all reporting needs. ECATS has partnered with major Text-To-911 providers to actively collect data from their TCC's which eliminates any need for additional hardware at a PSAP (except where reporting Text as TTY is required) with the ability to activate Text-To-9-1-1 reporting on a per PSAP basis without the need to make any site visit.

Provided below are a few examples of the text-to-911 reports provided by ECaTS:

Transcript - The SMS transcript report provides a complete transcript for each SMS 911.

Top Busiest Hours - The Top Busiest Hours by Sessions provides a report of all sessions for each of the busiest hours, sorted by the busiest hour to the least busy hour. With each hour, a graph is included that displays how the sessions were spread out over the hour by minute.

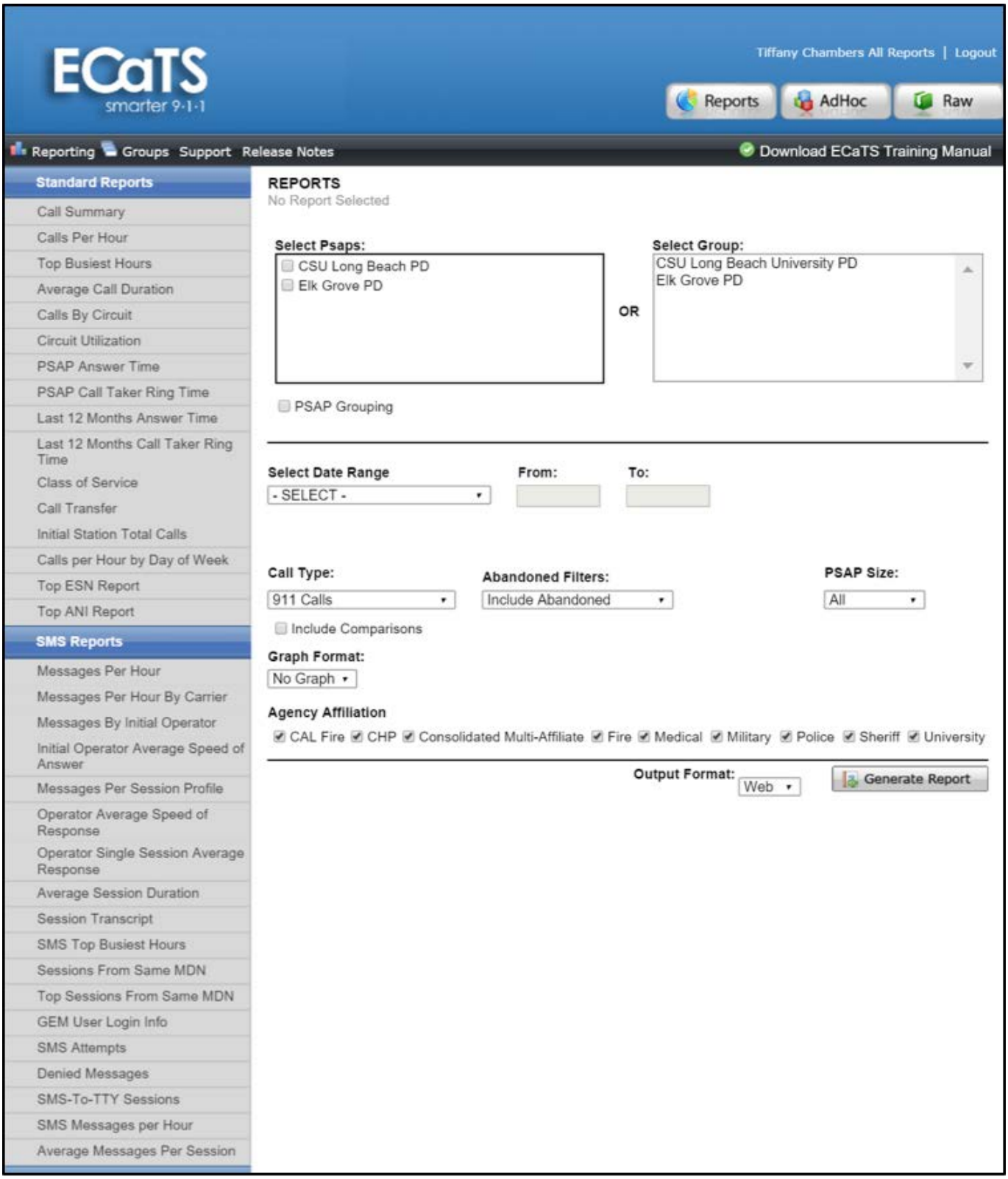
Total Messages Sent and Received by Hour - The total messages sent and received by hour report provides a metric of the total number of messages (MT/MO) that happened across each individual hour. The report displays the hours in 24 hour format and provides a unique sent/received count as well as a total for each hour.

Messages Per Hour By Carrier - The total messages sent/received by carrier report provides a metric by Carrier of the total number of sessions as well as

sent/received messages. When combined with a stacked bar graph, visualization of the popular carriers is very clear. The report breaks data out per hour with a final summary report at the end.

Operator Average Speed of Response - The operator average speed of response report measures the overall average for all messages sent within a particular Text-to-911 session. This report represents an overall average of all responses within the session for all operators that participated in the session.

Average Session Duration - The total number of text-to-911 complete sessions report provides a report by hour of complete sessions and the average duration each session lasted as well as averages for response time of the 911 operator and Text-to-911 originator.

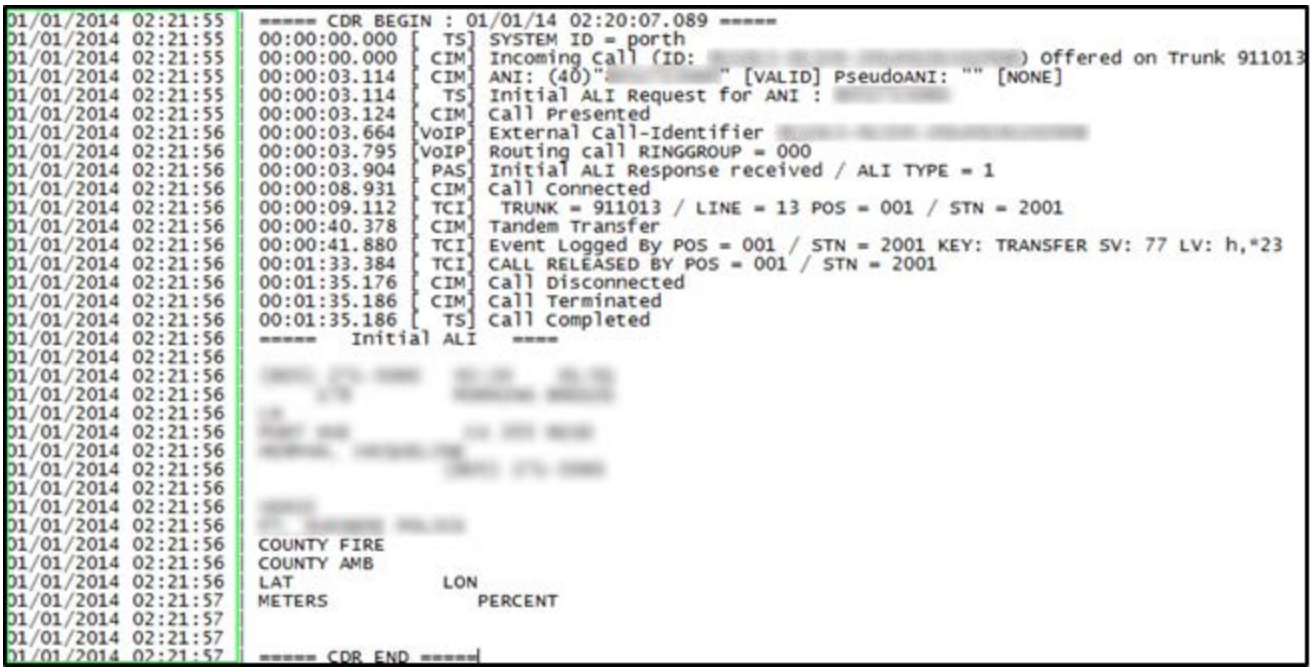


ECaTS Interface with Text-to-911 Reporting

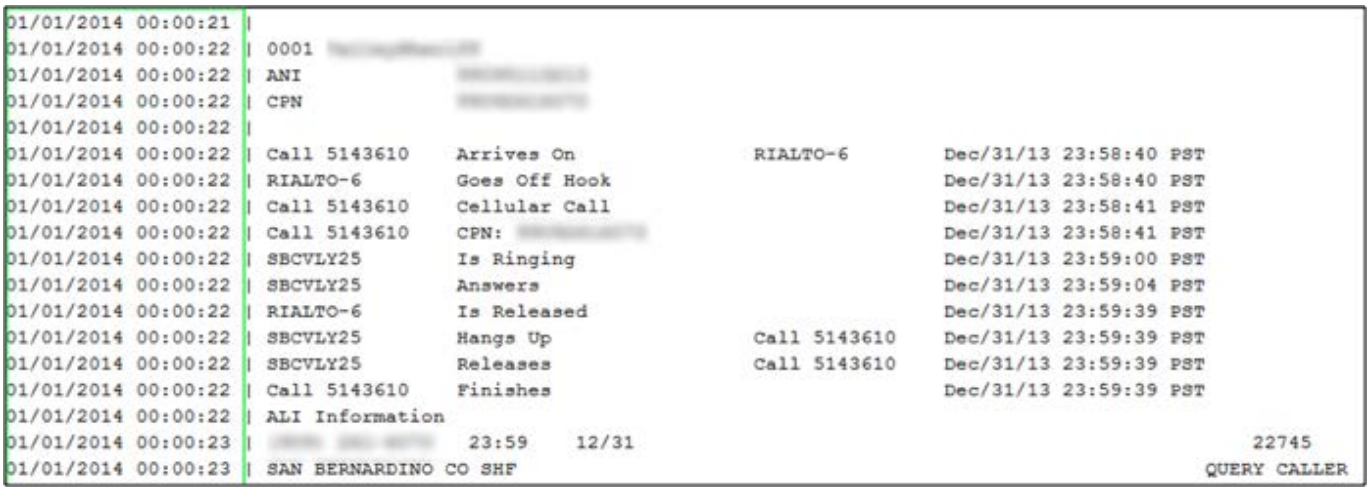
Requirement: Ability of the buffering device to batch CDR payload, stamp it with capture time, encrypt it and deliver the CDR data using a secure and encrypted methodology.

The RDDM automatically places a time stamp on any collected CDR record, regardless as to the method of collection (RS-232 or IP). The data itself is compressed and stored in a zip file and when transmitted is done over a secure SFTP connection via an SSH tunnel using strong encryption. This can be further encrypted by utilizing an encrypted point-to-point VPN tunnel between the RDDM location and the ECaTS cloud. Below is a sample of CDR data collected by an ECaTS RDDM which also illustrates the time stamp that is provided on each collected record. If you examine the samples below closely (Viper and Vesta 4.x presented – personal information has been blurred) you will notice there is a time stamp followed by the "|" (pipe) character. The timestamp to the left of the "|" (pipe, outlined in green) represents collection time and is provided by the RDDM, while the data to the right of the "|" (pipe) is the RAW CDR as collected and unchanged.

Viper



Sentinel/ Vesta 4.x



01/01/2014 00:00:21				
01/01/2014 00:00:22	0001			
01/01/2014 00:00:22	ANI			
01/01/2014 00:00:22	CPN			
01/01/2014 00:00:22				
01/01/2014 00:00:22	Call 5143610	Arrives On	RIALTO-6	Dec/31/13 23:58:40 PST
01/01/2014 00:00:22	RIALTO-6	Goes Off Hook		Dec/31/13 23:58:40 PST
01/01/2014 00:00:22	Call 5143610	Cellular Call		Dec/31/13 23:58:41 PST
01/01/2014 00:00:22	Call 5143610	CPN:		Dec/31/13 23:58:41 PST
01/01/2014 00:00:22	SBCVLY25	Is Ringing		Dec/31/13 23:59:00 PST
01/01/2014 00:00:22	SBCVLY25	Answers		Dec/31/13 23:59:04 PST
01/01/2014 00:00:22	RIALTO-6	Is Released		Dec/31/13 23:59:39 PST
01/01/2014 00:00:22	SBCVLY25	Hangs Up	Call 5143610	Dec/31/13 23:59:39 PST
01/01/2014 00:00:22	SBCVLY25	Releases	Call 5143610	Dec/31/13 23:59:39 PST
01/01/2014 00:00:22	Call 5143610	Finishes		Dec/31/13 23:59:39 PST
01/01/2014 00:00:22	ALI Information			
01/01/2014 00:00:23		23:59 12/31		22745
01/01/2014 00:00:23	SAN BERNARDINO CO SHF			QUERY CALLER

Requirement: Ability to provide multi-level reporting including: PSAP, ECD/County or Statewide level.

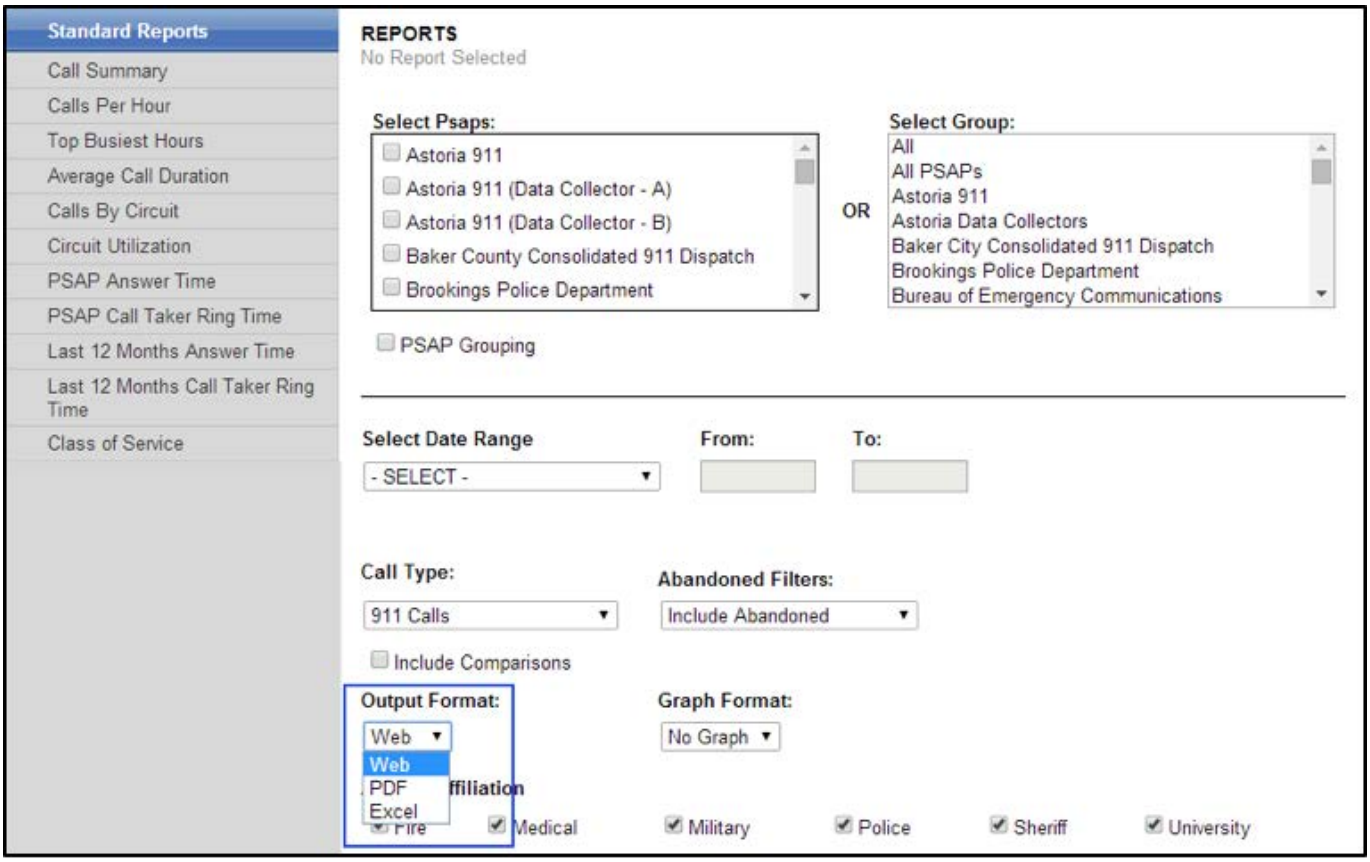
The ECaTS platform was designed for multi-level reporting across multiple different CPE platforms. The ability to render reports across PSAPs, counties, or statewide is a fundamental feature of the product. In addition, comparative reporting at multiple levels is also possible in the ECaTS system which provides additional comparative analysis opportunities within each reporting level (ex: compare PSAPs, or Counties).

Requirement: Ability to seamlessly report PSAP, ECD/County and State's 9-1-1 call statistics from one web-based location regardless of the CPE, Customer Premise Equipment, at the PSAPs.

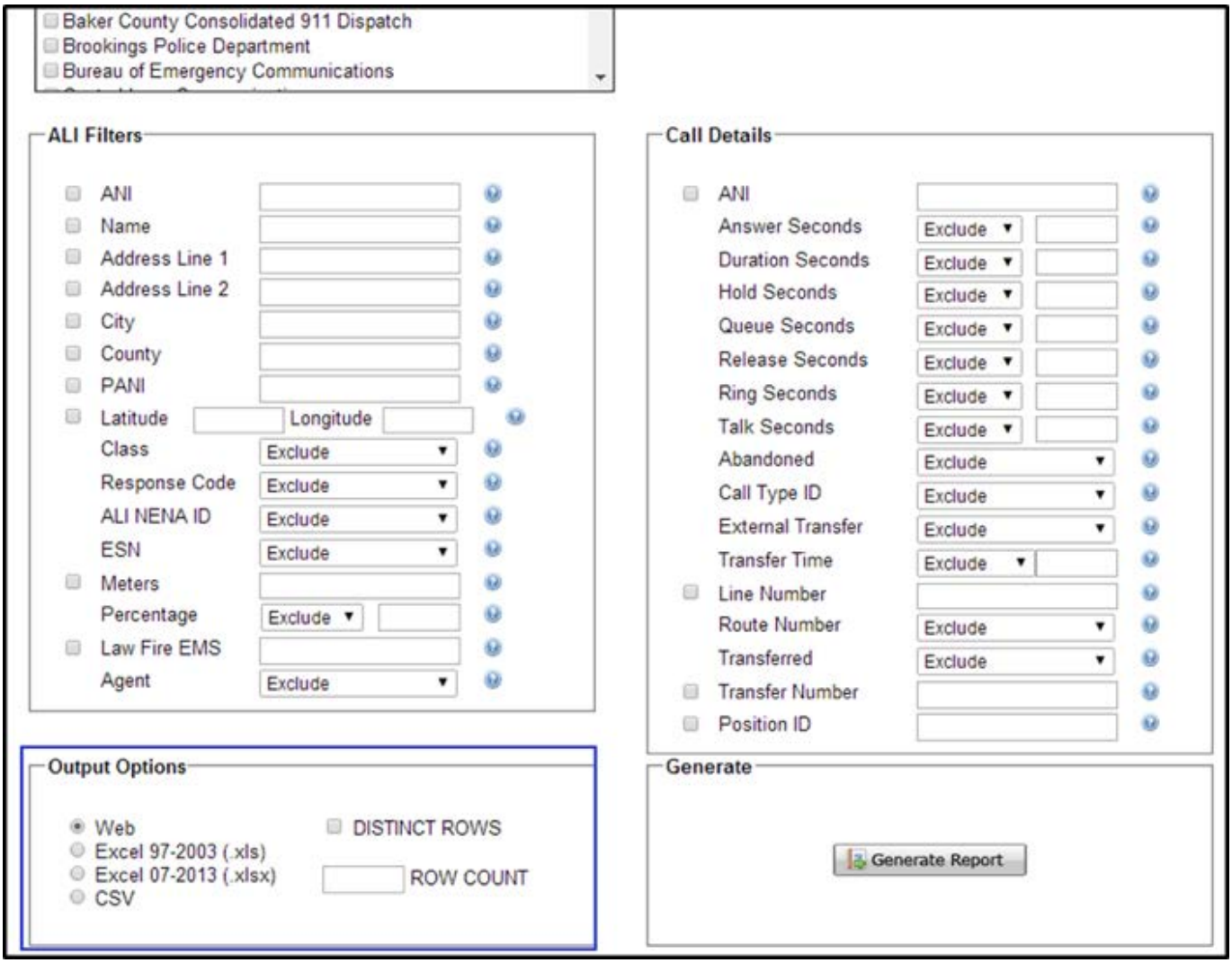
The ECaTS system was designed as an agnostic reporting solution which can support all CPE vendors in the 911 industry. The system has been designed from the ground up to support any data stream and to normalize this stream into a common set of reportable parameters. ECaTS has a library that is constantly growing of ALI and CPE data parsing patterns that support all CPE currently present in the industry and can be easily expanded to those data formats that have yet to be encountered. ECaTS can provide demonstrations of reporting across multiple CPE's at the request of the State of Alabama.

Requirement: Ability to export reports in PDF, HTML, CVS and Excel formats

ECaTS provides exporting in all formats required: PDF, HTML, CSV, and Excel. In addition, the Excel export is configured to support older Excel 97' based system (with a 65,538 row limit) and current version of excel where the row limit exceeds one million rows. All reports in the ECaTS platform (Ad-hoc and standard) can be exported in the supported formats required by the State of Alabama. The screen caps below show the export options available in the ECATS standard and ad-hoc systems.



Standard Reporting Output Options



Ad-Hoc Reporting Export Options

Requirement: Ability to generate universal reports from anywhere with an Internet connection and accessible on any devices with an internet browser, i.e. iPad, iPhones, iOS, Android or Windows based systems, laptops and desktops.

The ECaTS platform is a web based standards compliant MIS system. ECaTS only runs from a system that can load a browser either on a mobile (iOS, Android, Windows Phone) platform or a desktop platform (Windows, OS X, Linux) that can run a standards compliant browser (ex: Chrome, Firefox, Safari, IE). The MIS service itself is hosted at the ECaTS data center and if the State of Alabama allows, the access can be opened such that users can generate reports from any location with internet access vs. needing to be on a closed VPN connection from a State of Alabama network. The choice of open access vs. VPN is dependent on the security requirements and needs of the State of Alabama and ECaTS can accommodate any necessary model.

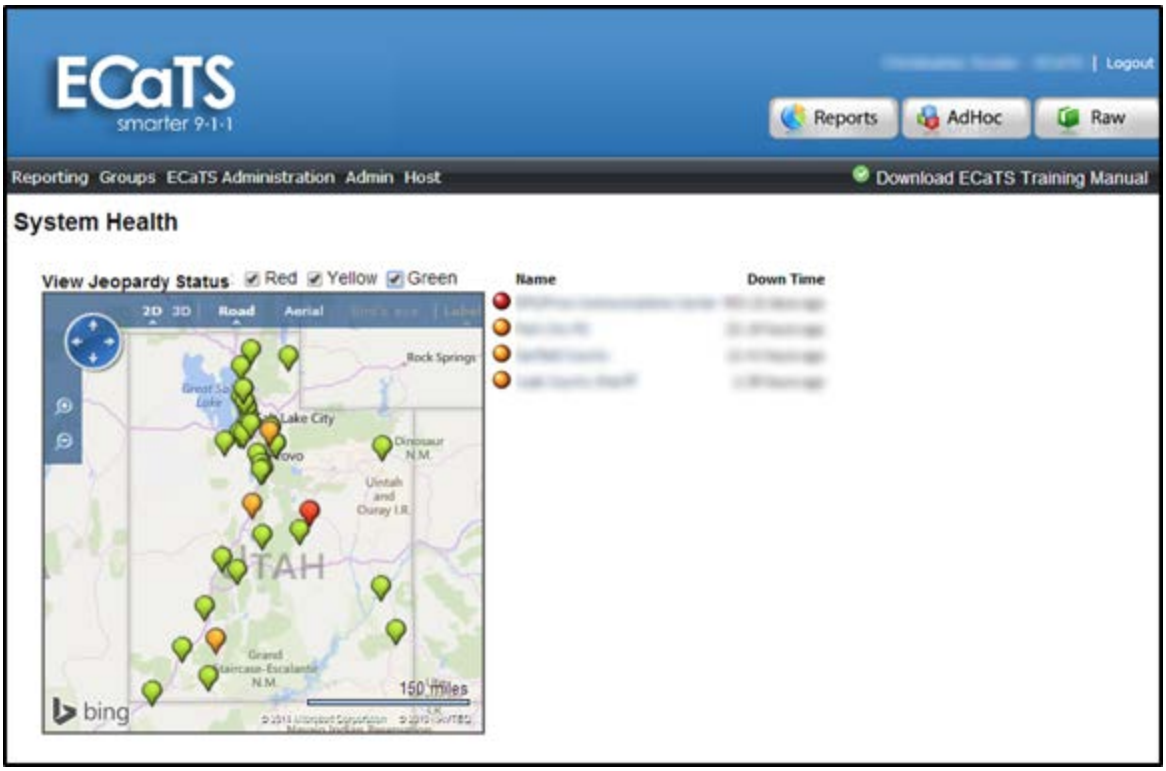
Requirement: Ability to analyze ANGEN's overall 911 system performance

As a system designed to provide multi-level reporting across multiple PSAPs the ability to analyze an entire statewide 911 deployment is as easy as reporting on all PSAPs in a single report. The ECaTS platform provides this level of reporting by combining data from the ESInet logger and the local PSAP CDR data. This enables a full end-to-end analysis of each call and of the 911 system itself. In addition to aggregating multiple data sources for a complete end-to end picture, ECaTS provides multiple means of grouping and sorting the data to ensure that the needed statewide information views are available and can generate the metrics required of the State of Alabama.

Requirement: Ability to provide a color coded map view of the State's System Health for all PSAPs in the State.

System Health

The ECaTS system provides a statewide view of all the PSAPs in Alabama using a map interface. Providing the Alabama 9-1-1 Board with a near real-time health monitoring system for all PSAPs that are covered by the ECaTS system. Each location is dynamically colored Green, Yellow or Red. This system health system monitors both the health and status of the RDDM collecting data at a particular PSAP and also performs real-time analytics and rendering of call volume and ALI bid activity. In the event call volume drops below historical moving averages a Low Call Volume alert (yellow) will occur bringing attention to the PSAP for call volume analysis. In addition to the call volume alerting, the system health also monitors for failed ALI bids and when concurrent failures for a single PSAP occur an alert (red) is created bringing attention to the PSAP of a potential ALI bid issues. Figure 14 below illustrates system health for a statewide deployment.



System Health Interface

5.2.3 AD-HOC REPORTING SYSTEM

Response: Comply

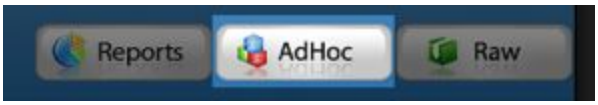
Ad-Hoc Reports

Ad-Hoc reporting is one of the most powerful features of ECaTS and accessible through a user friendly interface. The Ad-Hoc functionality empowers authorized users with the ability to generate custom reports against any data element stored in the system, on the fly, with minimal computer skills.

Ad-Hoc Reports are aimed towards advanced users of ECaTS who demand flexibility from their reporting services. Users are able to enter three report screen formats: Standard, Advanced, and Shared. The Standard editor gives the user an easy method for choosing and applying filters by implementing intuitive drop down lists and checkboxes for each data element. The dropdown boxes dynamically change their content based on previously selected criteria to keep the interface simple. The Advanced editor enables the user to take Ad-Hoc reporting one step further by giving the user ability to integrate SQL style Boolean expressions.

This reporting tool enables the end user to comb through large amounts of data and give the user the ability to create a report that is specific to the user's needs. Our Ad-Hoc tool enables the end user to filter on specific fields from the ALI and CDR to build a customized output. Not only can Ad-Hoc reports be saved once they are defined, but they can also be shared with other ECaTS users.

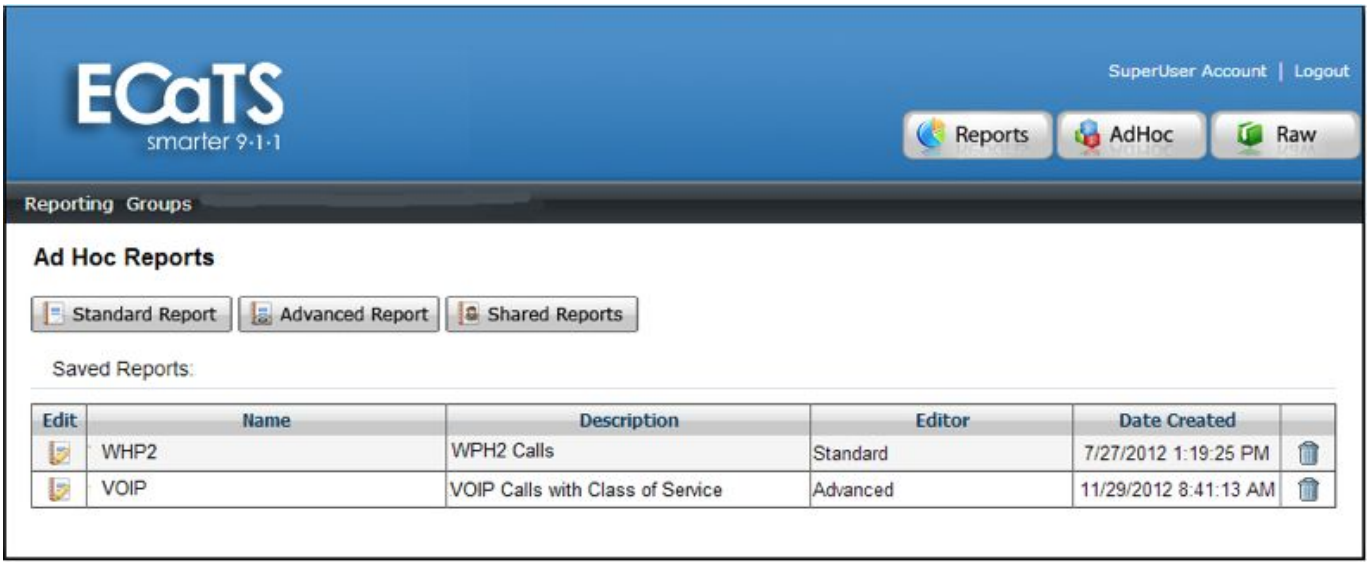
To access the Ad-Hoc reporting tool select the 'Ad-Hoc' button from the top right hand side of the ECaTS portal screen.



Ad-Hoc Homepage

By clicking on the Ad-Hoc button, ECaTS users will arrive at the Ad-Hoc home page. The homepage is a collection of the user's saved Ad-Hoc reports. Please note, there are three different types of Ad-Hoc reports: Standard Reports, Advanced Reports and Shared Reports. Standard and Advanced reports that are saved will be listed in the table on the following page.

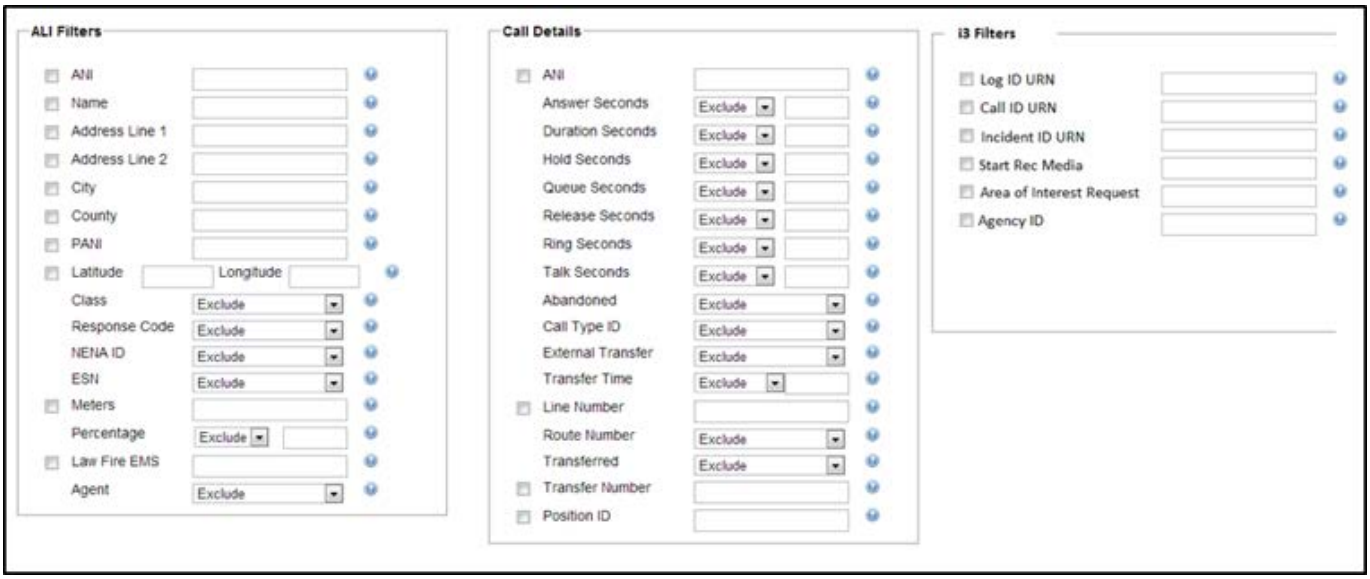
The Ad-hoc Reporting system through the ECaTS portal allows each user to query the data based on user permissions and desired output. ECaTS features two Ad-hoc interfaces, Standard and Advanced.



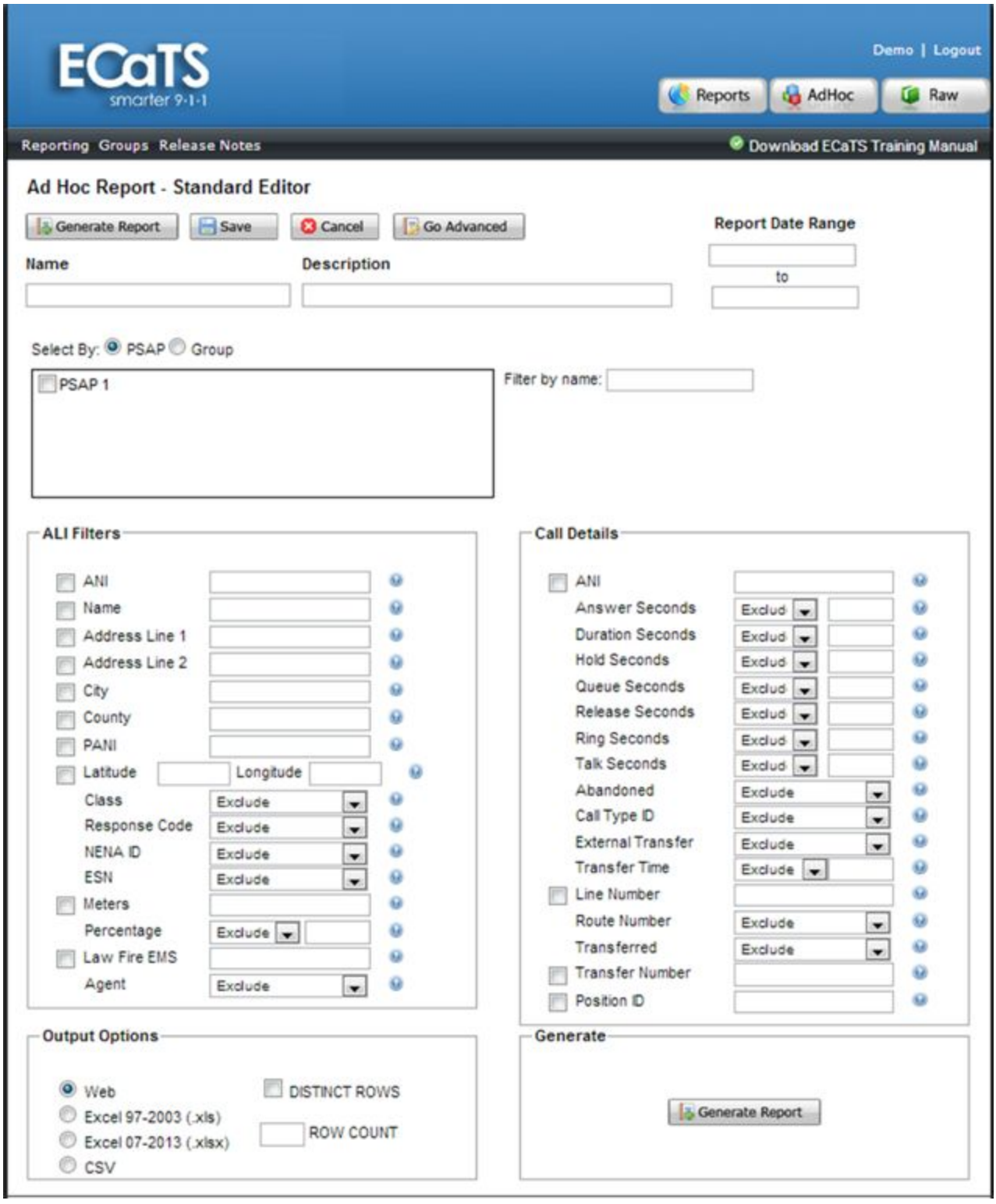
Ad-Hoc Homepage

Standard Ad-Hoc

Standard Ad-Hoc reporting is the most commonly used report generator. The search filters on the Standard viewer offer Boolean (true or false) expressions as well as distinct searches to find calls based on CDR and ALI information. As shown below, there are two types of call data that a user can search on: ALI filters, Call Details and i3 Filters.

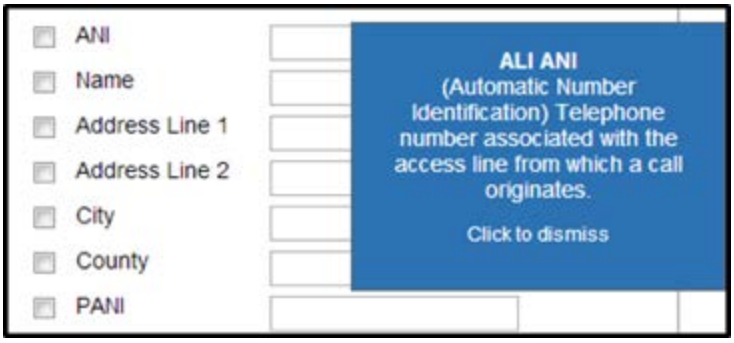


Standard Ad-Hoc Filters



Standard Ad-Hoc Interface

Next to each of the fields' filters you will notice a blue '?' button that indicates what the field is used for. To better understand each field, click the '?' button for a description of the field, as shown below for "ANI".

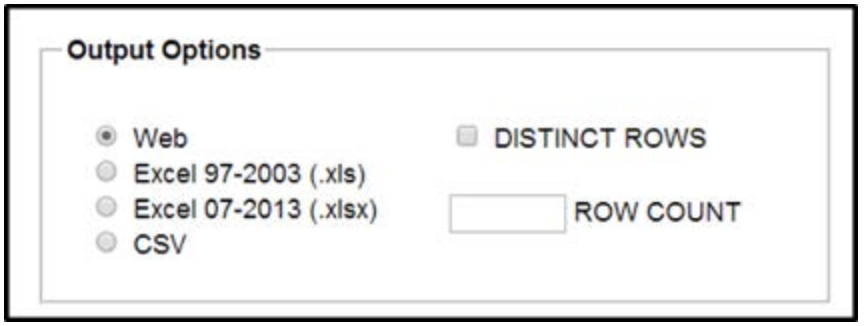


To search for partial or exact matches on a field, simply add what you are searching for in the text box and the search engine will do the rest. To include that search as an output column in the report, simply select the checkbox to the left of the field.

Ad-hoc also allows the user to narrow down reporting windows by hour, minute and second, offering the option to report by a specific shift or time/date range.

Ad-hoc reporting provides multiple output format options. These options include:

1. Web
2. Excel 97-2003
3. Excel 2007-2013
4. CSV



Standard Ad-hoc Report Example:

Filters:

Report Result (Excel Format):

Ad Hoc Report:				
Name:	ANI Search			
Date:	12/15/2013			
Description:				
PSAP 1				
Seizure Date	Seizure Time	ALI ANI	ALI PANI	ALI Class
1/1/2013	13:45:34	555-123-4567	555-511-2345	WPH2
1/1/2013	13:56:29	555-123-4567	555-511-2345	WPH2

Advanced Ad-Hoc

Advanced Ad-Hoc reporting is more often used by advanced or frequent ECaTS users. The search filters on the Advanced Ad-Hoc Viewer offer Boolean (true or false) expressions as well as distinct searches to find calls based on the source and fields selected.

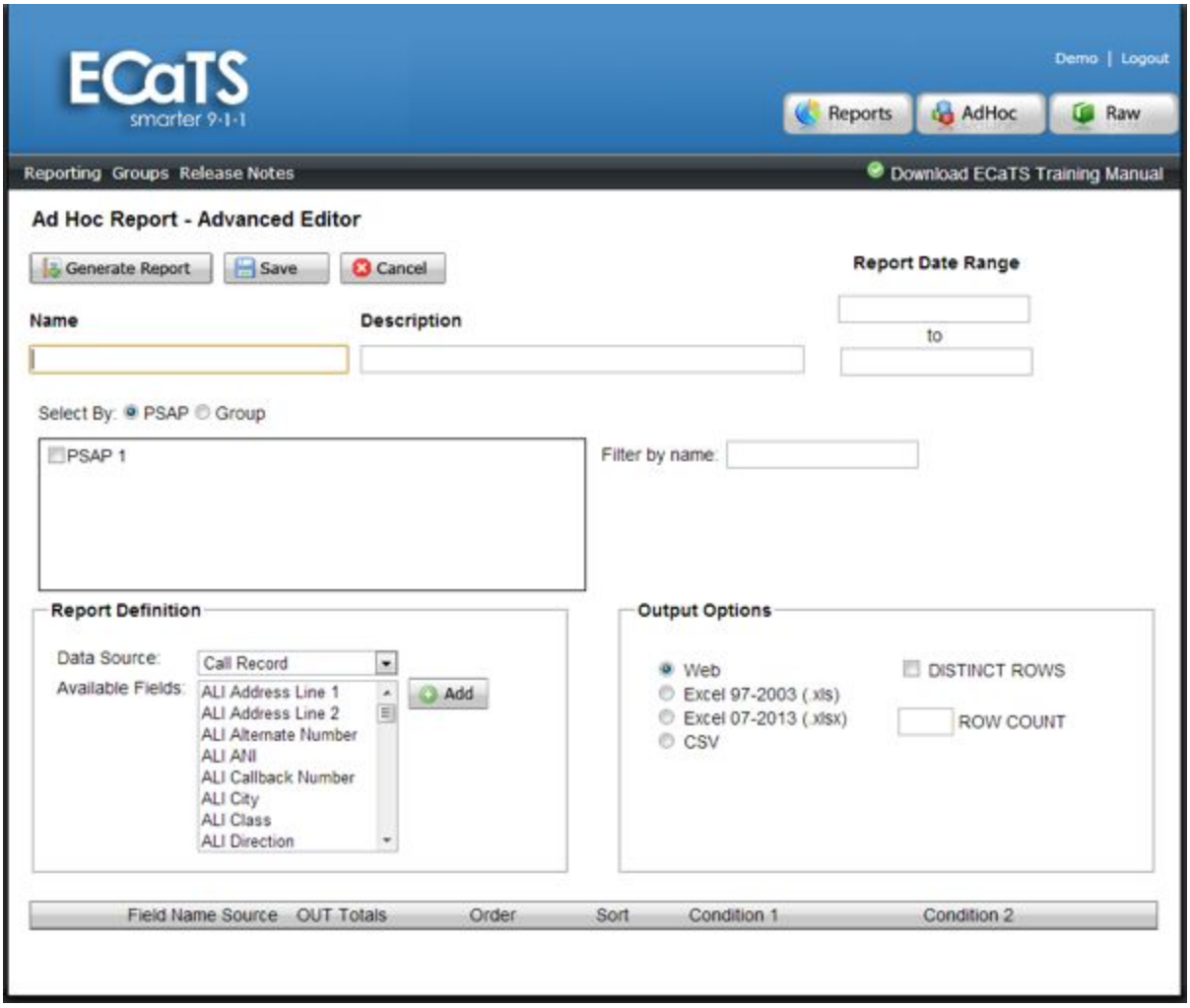
The Advanced Ad-hoc interface provides additional functionality for report building also using both CDR and ESInet meta data.

1. The user can choose the field to sort data by (in a descending or ascending order)
2. The user can choose the order of columns in the report
3. Totals may be selected per field, these totals include:

- Count
- Average
- Min
- Max
- Sum

4. Multiple conditions per field may be entered

Advanced Ad-hoc Reporting Interface:



Advanced Ad-Hoc Interface

Advanced Ad-hoc Examples:
Report Filters:

	Field Name	Source	OUT	Totals	Order	Sort	Condition 1		Condition 2	
	CallTypeId	Call Record	☑	COUNT			CONTAINS	911		
	Agent	Call Record	☑				=	AGENT 1		
	IsAbandoned	Call Record	☑							
	Answer Secs	Call Record	☑	AVG		Des	>	5		
	Duration Secs	Call Record	☑	AVG						

Report Results:

Ad Hoc Report:	
Name:	Report 1
Date:	12/15/2013
Description:	

PSAP 1

Seizure Date	Seizure Time	CallTypeId	OperatorName	IsAbandoned	Answer Secs	Duration Secs
6/5/2013	20:57:29	911 Calls	AGENT 1	FALSE	120	330
6/29/2013	14:12:37	911 Calls	AGENT 1	TRUE	20	70
6/11/2013	23:04:37	911 Calls	AGENT 1	FALSE	19	677
6/3/2013	15:38:16	911 Calls	AGENT 1	FALSE	18	37
6/2/2013	21:56:06	911 Calls	AGENT 1	TRUE	3	127
6/11/2013	23:04:38	911 Calls	AGENT 1	FALSE	3	676
6/26/2013	15:51:58	911 Calls	AGENT 1	FALSE	3	67
6/2/2013	18:53:37	911 Calls	AGENT 1	FALSE	3	64
6/2/2013	21:56:08	911 Calls	AGENT 1	FALSE	3	125
6/3/2013	17:15:06	911 Calls	AGENT 1	FALSE	3	26
6/3/2013	17:23:15	911 Calls	AGENT 1	FALSE	2	19
Totals and Averages			11		18	202

Sharing Reports

ECaTS also allows authorized users to share reports generated in the ad-hoc reporting tool with other users of the application. For instance, a user may develop an ad-hoc report that yields specific or interesting analytics regarding 911 call volumes in their county or jurisdiction. They can then share the report with other authorized users so they may discuss the contents of the report or to provide additional insight into discussion topics for upcoming meetings.

5.2.4 SYSTEM DASHBOARD

Response: Comply

ECaTS Real-Time Dashboard

ECaTS, Emergency Call Tracking System, Real-Time Dashboard is the first of its kind in the Public Safety Industry. The dashboard gives PSAP/County/State Management Personnel the ability to monitor 9-1-1 call activity in a visual real-time display.

The ECaTS Dashboard provides a visual representation of actual 911 call activity, answer time, hold time, and other factors, and clearly represents the real-or near-time condition of 9-1-1 within the specified jurisdiction. Additional analytics segment the data by wireless carrier providing a clear identification of wireless 9-1-1 calls or other communication data traffic through the PSAP/PSAPs in the State and/or County. Each data factor such as call volume will be compared against normative vales (averages) to identify anomalies in call traffic, call volume and call handling statistics. An area of the dashboard will be dedicated to mapping incoming calls to clearly illustrate possible areas of high traffic or anomalous call volume (either higher or lower than normal). Wireless carrier activity will also be compared against normative values and significant deviations between normal and abnormal call activity will be highlighted as an "alert" by the dashboard.

If additional functionality is desired of the real-time display, customizations can be done on a fixed bid basis after a joint application design session has been completed to determine the desired enhanced functionality.

Statewide/Countywide/Individual PSAP Dashboard Display

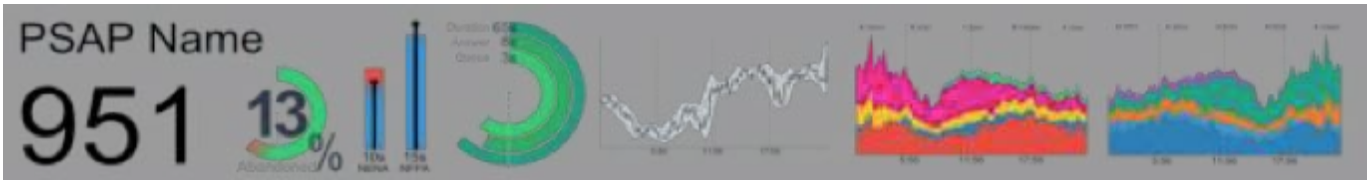
ECaTS gives its users the ability to monitor real-time 9-1-1 call statistics Statewide, Countywide and at the individual PSAP. The Alabama 9-1-1 Board will have access to a live dashboard to assist in the following:

- Gathering of real-time intelligence and actionable information to enhance emergency response and public safety anywhere in the State.
- Combining big data/analytics technologies with real-time data feeds (i3 logging/ESInet) for improved interagency coordination and development of 'the right' resources.
- Ensures real-time situational awareness at both Local and State levels
- Enables enhanced early warning threat identification
- Supports faster inter-agency resource deployment at drastically reduced response times
- Offers, in some cases, the potential to proactively prevent loss of life, infrastructure or property.

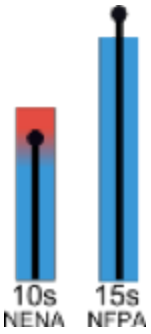
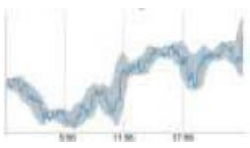
Hanging State Dashboard Mockup

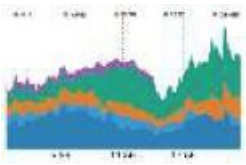
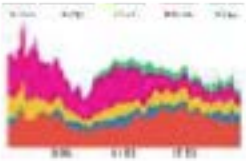
State Dashboard Overview

The image below shows a sample of the type of KPI's that can be monitored using the ECaTS Dashboard:



Dashboard Widgets

Field	Description
	Represents the name of the PSAP and its FCC ID
	Represents the Abandoned call visualization for the PSAP as Changes: The abandoned percentage at the PSAP level is calculated over the past 60 minutes and updated every minute.
	Represents the current answer time thresholds being met for both NENA and NFPA standards Changes: The percentage of calls answered in less than 10 or 15 seconds at the PSAP level is calculated over the past 60 minutes and updated every minute.
	Represents the current state of Duration, Answer Times and Queue times and any alerts for those timings Changes: The current averages at the PSAP level are calculated over the past 60 minutes and updated every minute.
	Represents the PSAP call volume Changes: Each data point at the PSAP level represents the number of calls in the past 60 minutes (calls per hour),

	updated every minute. The viewing window is the past hour with time labels at 15, 30, and 45 minutes in the past, precise to the minute.
	Represents the PSAP current class of service call volume Changes: Call volume at the PSAP level is measured as the number of calls in the past 60 minutes, updated every minute. The viewing window is the past hour with time labels at 15, 30, and 45 minutes in the past, precise to the minute.
	Represents the PSAP current wireless carrier call volume Changes: Call volume at the PSAP level is measured as the number of calls in the past 60 minutes, updated every minute. The viewing window is the past hour with time labels at 15, 30, and 45 minutes in the past, precise to the minute.

Dashboard Widgets Description

5.3 OPERATIONAL REPORTING AND LOGGING

Response: Comply

Payload Processing Times: The payload processing time is calculated from the time the payload enters through the BCF until the call is routed to the PSAP via the ECRF.

Position answered: The position that answers each event will be recorded and reported on through the Initial Station Total Calls report. This report provides hourly counts for each answered event by position/station. In addition, the position that answered each event is a field in the ad-hoc system. A user has the ability to filter by position, or to simply include position number as a field in a report.

Initial Station Total Calls Report Example:

Hour	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total
Station Not Available	1	0	1	3	2	1	0	3	2	3	3	8	1	1	7	2	2	2	5	5	3	5	3	3	66
Station 2201	0	0	3	0	0	0	0	1	0	4	10	19	21	27	20	36	32	20	16	6	0	0	0	0	215
Station 2202	23	11	5	4	15	15	23	19	28	28	33	19	36	45	34	33	36	25	7	12	16	24	42	20	553
Station 2203	4	9	7	1	1	0	0	0	0	1	5	1	5	4	0	10	16	19	23	20	29	39	7	9	210
Station 2204	2	9	16	20	12	4	1	16	40	30	64	58	52	31	37	34	30	20	19	21	38	17	7	3	581
Station 2205	13	25	13	2	7	4	20	40	45	41	33	27	36	12	49	29	41	26	35	29	10	15	24	28	604
Total	43	54	45	30	37	24	44	79	115	107	148	132	151	120	147	144	157	112	105	93	96	100	83	63	2229

Ad-Hoc Report Example:

Name:	Positions				
Date:					1/1/2014
Description:					
PSAP 1					
Seizure Date	**Seizure Time**	**CallTypeId**	**Position ID**	**IsAbandoned**	**Duration Secs**
12/8/2013	00:15:00	911 Calls	7	FALSE	10
12/8/2013	00:15:37	911 Calls	11	FALSE	100
12/8/2013	00:29:32	911 Calls	11	FALSE	42
12/8/2013	00:46:56	911 Calls	7	FALSE	277
12/8/2013	00:54:04	911 Calls	8	FALSE	64
12/8/2013	00:56:32	911 Calls	8	FALSE	110
12/8/2013	01:01:57	911 Calls	8	FALSE	107
12/8/2013	01:02:31	911 Calls	7	FALSE	3519
12/8/2013	01:31:41	911 Calls	7	TRUE	27
12/8/2013	01:36:41	911 Calls	7	FALSE	214

Answer time: Answer time is calculated from seizure to event answer using the Call Handling supplied meta data. This is a field included on the Average Duration report, and is also used to create the PSAP Answer Time report.

Answer Time Report Example:

	Answer Times In Seconds					
Hour	0 - 10	11-20	21 - 60	61 - 120	120+	Totals
00:00	114	3	1	0	0	124
01:00	110	6	3	0	0	119
02:00	86	6	0	0	0	92
03:00	74	3	4	1	2	84
04:00	68	7	1	0	0	76
05:00	76	5	5	0	0	86
06:00	85	8	11	1	0	105
07:00	146	20	11	1	0	178
08:00	251	36	14	2	0	303
09:00	322	55	14	2	0	393
10:00	306	48	15	2	0	371
11:00	298	65	44	4	0	411
12:00	301	86	27	4	2	420
13:00	340	63	19	1	0	423
14:00	386	81	27	0	0	494
15:00	423	89	33	0	0	545
16:00	415	102	28	3	0	548
17:00	373	78	25	3	0	479
18:00	352	62	10	0	0	424
19:00	314	29	3	0	0	346
20:00	252	30	12	0	0	294
21:00	229	19	4	0	0	252
22:00	163	14	3	0	0	180
23:00	135	11	1	0	0	147
Total	**5,619**	**932**	**315**	**24**	**4**	**6,894**
Overall Percentage:	**81.51%**	**13.52%**	**4.57%**	**0.35%**	**0.06%**	**100.00%**
% answered ≤ 10 seconds	**81.51%**					

In addition, answer seconds are a field available in ad-hoc. Users can include answer seconds, search by a specific range of answer seconds (such as <15 seconds), look at answer seconds for a specific position or operator, or build averages.

Ad Hoc Report:						
Name:	Answer Seconds					
Date:						1/1/2014
Description:						
PSAP 1						
Seizure Date	Seizure Time	CallTypeId	Position ID	IsAbandoned	Answer Secs	Duration Secs
12/8/2013	00:15:00	911 Calls	7	FALSE	6	10
12/8/2013	00:15:37	911 Calls	11	FALSE	8	100
12/8/2013	00:29:32	911 Calls	11	FALSE	8	42
12/8/2013	00:46:56	911 Calls	7	FALSE	7	277
12/8/2013	00:54:04	911 Calls	8	FALSE	6	64
12/8/2013	00:56:32	911 Calls	8	FALSE	7	110
12/8/2013	01:01:57	911 Calls	8	FALSE	8	107

Disconnect time: The disconnect time of a call is the total time of the call, which is also the duration value. ECaTS uses the duration as the disconnect time (or computed time value Time of call + Total duration of seconds) and these values can be found both in the Average Event Duration report or accessed as an ad hoc value as illustrated below:

Ad Hoc Report:						
Name:	Duration Seconds					
Date:						1/1/2014
Description:						
PSAP 1						
Seizure Date	Seizure Time	CallTypeId	Position ID	IsAbandoned	Answer Secs	Duration Secs
12/8/2013	00:15:00	911 Calls	7	FALSE	6	10
12/8/2013	00:15:37	911 Calls	11	FALSE	8	100
12/8/2013	00:29:32	911 Calls	11	FALSE	8	42
12/8/2013	00:46:56	911 Calls	7	FALSE	7	277
12/8/2013	00:54:04	911 Calls	8	FALSE	6	64
12/8/2013	00:56:32	911 Calls	8	FALSE	7	110
12/8/2013	01:01:57	911 Calls	8	FALSE	8	107

Incoming IP Address: The incoming IP address of each event will be stored as the field 'Incoming IP Address' and will be reportable through ad-hoc. This will allow the user to filter or search by a full or partial IP address. Users can build customized reports, including desired associated information.

In addition, the 'Events by Incoming IP Address' report will provide totals by incoming IP address for the date range selected (see Events by Incoming IP Address).

Ad-hoc Report Example:

Ad Hoc Report:			
Name:	IP Address		
Date:			1/1/2014
Description:			
PSAP 1			
Seizure Date	**Seizure Time**	**CallTypeId**	**IP Address**
12/8/2013	00:15:00	911 Calls	123.456.789.12
12/8/2013	00:15:37	Administrative	134.567.891.23
12/8/2013	00:29:32	911 Calls	145.678.910.12
12/8/2013	00:46:56	911 Calls	123.678.891.01
12/8/2013	00:54:04	911 Calls	124.565.789.12
12/8/2013	00:56:32	911 Calls	111.123.456.78

Total Count of Payloads by Type: Each event will include an indicator of payload 'type'. The 'Total Count of Payloads by Type' report will provide total counts by payload type, and the overall number of payloads for the date range selected. The report may be customized to contain additional relevant/desired information.

Payload Type	Total Count
Audio	10
Video	13
Real-Time Text	18
TTY	16
Instant Messaging	1
NHI	13
	71

Payload types are as follows:

1. Audio
2. Video
3. Real-Time Text
4. TTY (Baudout Tones)
5. Instant Messaging
6. NHI Events (Non-Human Initiated)

Average Event Waiting Report: The average event waiting time can be obtained through the Average Duration report (as well as through ad-hoc).

		Averages				
Hour	Number of Events	Queue Time	Ring Time	Hold Time	Talk Time	Duration
00:00	124	3.1	4.3	1.7	110.7	119.8
01:00	119	2.9	4.8	20.2	123.7	151.6
02:00	92	3.1	4.1	3.2	101.3	111.7
03:00	84	2.9	12.6	3.2	118.7	137.5
04:00	76	3.1	4.7	3.7	103.1	114.7
05:00	86	3.0	5.3	1.8	106.8	116.8
06:00	105	2.8	7.2	1.7	92.3	104.0
07:00	178	3.0	6.2	2.5	66.9	78.6
08:00	303	3.2	5.9	3.4	76.2	88.7
09:00	393	3.2	5.7	4.9	74.8	88.6
10:00	371	3.1	6.1	2.3	79.6	91.1
11:00	411	3.1	8.0	4.1	81.5	96.7
12:00	420	3.0	7.9	9.6	77.4	97.8
13:00	423	3.0	5.8	2.4	78.9	90.1
14:00	494	2.9	6.1	5.5	87.1	101.7
15:00	545	3.0	6.1	6.5	83.6	99.3
16:00	548	3.0	6.3	4.3	86.5	100.3
17:00	479	3.0	6.3	4.1	92.1	105.6
18:00	424	3.0	5.1	1.9	95.2	105.2
19:00	346	3.0	4.2	2.9	99.3	109.5
20:00	294	3.0	5.1	4.5	100.3	112.9
21:00	252	3.0	4.7	1.3	100.6	109.6
22:00	180	3.0	4.5	2.8	139.4	149.7
23:00	147	2.9	4.3	1.2	119.0	127.5
Totals:	**6894**					
Averages:		**3.03**	**5.97**	**4.27**	**89.95**	**103.22**

Average Event Duration: The average duration will be located on the Average Duration report (see Average Event Waiting Time). In addition, duration seconds is a reportable field in ad-hoc and can be averaged and queried against based on parameters set by the user.

Ad-Hoc Report Example:

Ad Hoc Report:						
Name:	Duration Seconds					
Date:						1/1/2014
Description:						

PSAP 1

Seizure Date	Seizure Time	CallTypeId	Position ID	IsAbandoned	Answer Secs	Duration Secs
12/8/2013	00:15:00	911 Calls	7	FALSE	6	10
12/8/2013	00:15:37	911 Calls	11	FALSE	8	100
12/8/2013	00:29:32	911 Calls	11	FALSE	8	42
12/8/2013	00:46:56	911 Calls	7	FALSE	7	277
12/8/2013	00:54:04	911 Calls	8	FALSE	6	64
12/8/2013	00:56:32	911 Calls	8	FALSE	7	110
12/8/2013	01:01:57	911 Calls	8	FALSE	8	107

Total Abandoned Events: The Event Summary report will provide summary information regarding events, such as the number of events answered, the number of events abandoned, and the percentage of abandoned events. The Event Summary can be ran on each type of event individually, or all event types.

Event Summary Report:

Date	Wireless 911	Wireline 911	911	911 Abdn	Unparsed 911	Total 911	911 Abdn Percentage	Average Call Duration
12/1/2013	10	40	50	6	0	56	10.71%	118.6
12/2/2013	13	60	73	6	0	79	7.59%	69.0
12/3/2013	18	50	68	11	0	79	13.92%	75.7
12/4/2013	16	40	56	9	1	66	13.64%	64.2
12/5/2013	1	50	51	14	0	65	21.54%	59.0
12/6/2013	13	60	73	6	1	80	7.50%	85.6
12/7/2013	8	60	68	14	0	82	17.07%	84.9
PSAP Totals	**79**	**360**	**439**	**66**	**2**	**507**	**13.02%**	**78.8**

Abandoned Events Per Hour:

Date	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total
12/1/2013	9	9	10	1	4	3	5	8	10	8	12	17	16	10	23	28	10	15	7	10	11	6	10	3	243
12/2/2013	4	5	3	0	8	6	7	10	18	25	22	24	27	18	28	17	23	19	14	17	8	8	8	8	327
12/3/2013	4	6	5	3	6	3	4	12	18	19	29	22	25	14	24	28	31	15	18	14	13	4	16	5	338
12/4/2013	4	6	8	3	5	7	9	13	19	18	23	10	24	23	16	16	28	12	13	9	20	6	11	9	312
12/5/2013	7	8	7	14	2	4	7	14	19	13	28	23	23	17	15	22	18	16	16	24	18	30	17	17	379
12/6/2013	5	12	6	7	2	1	8	13	22	9	15	18	21	18	21	15	27	20	15	10	8	15	15	13	316
12/7/2013	10	8	6	2	10	0	4	9	9	15	19	18	15	20	20	20	20	15	22	9	18	31	6	8	314
Total	43	54	45	30	37	24	44	79	115	107	148	132	151	120	147	144	157	112	105	93	96	100	83	63	2229
Abandoned Events	1	0	1	3	2	1	0	3	2	3	3	8	1	1	7	2	2	2	5	5	3	5	3	3	66

Events by incoming IP address: The 'Events by Incoming IP Address' report will provide total counts by IP address for the date range selected. Once selecting the 'Events by IP Address' report in the parameters screen, the user will be presented

with checkboxes used to select the event(s) included in the report. The report may be customized to include additional relevant or desired information.

Events by Hour of Day: The Events per Hour report will provide event counts by hour of day. The hour the event is placed in will be determined by the seizure time of the event. Once selecting the 'Events per Hour' report in the parameters screen, the user will be presented with checkboxes used to select the event(s) included in the report. Some examples of available events are:

1. Audio
2. Video
3. Real-Time Text Messaging
4. Instant Messaging
5. TTY

Events Per Hour Report Example:

Date	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total
12/1/2013	9	9	10	1	4	3	5	8	10	8	12	17	16	10	23	26	10	15	7	10	11	6	10	3	243
12/2/2013	4	5	3	0	8	6	7	10	18	25	22	24	27	18	28	17	23	19	14	17	8	8	8	8	327
12/3/2013	4	6	5	3	6	3	4	12	18	19	29	22	25	14	24	28	31	15	18	14	13	4	16	5	338
12/4/2013	4	6	8	3	5	7	9	13	19	18	23	10	24	23	16	16	28	12	13	9	20	6	11	9	312
12/5/2013	7	8	7	14	2	4	7	14	19	13	28	23	23	17	15	22	18	16	16	24	18	30	17	17	379
12/6/2013	5	12	6	7	2	1	8	13	22	9	15	18	21	18	21	15	27	20	15	10	8	15	15	13	316
12/7/2013	10	8	6	2	10	0	4	9	9	15	19	18	15	20	20	20	20	15	22	9	18	31	6	8	314
Total	**43**	**54**	**45**	**30**	**37**	**24**	**44**	**79**	**115**	**107**	**148**	**132**	**151**	**120**	**147**	**144**	**157**	**112**	**105**	**93**	**96**	**100**	**83**	**63**	**2229**
Abandoned Events	1	0	1	3	2	1	0	3	2	3	3	8	1	1	7	2	2	2	5	5	3	5	3	3	66

Events Answered by Position: The position that answers each event will be recorded and reported on through the Initial Station Total Events report. This report provides hourly counts for each answered event by position/station.

Initial Station Total Events Report Example:

Hour	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total
Station Not Available	1	0	1	3	2	1	0	3	2	3	3	8	1	1	7	2	2	2	5	5	3	5	3	3	66
Station 2201	0	0	3	0	0	0	0	1	0	4	10	19	21	27	20	36	32	20	16	6	0	0	0	0	215
Station 2202	23	11	5	4	15	15	23	19	28	28	33	19	36	45	34	33	36	25	7	12	16	24	42	20	553
Station 2203	4	9	7	1	1	0	0	0	0	1	5	1	5	4	0	10	16	19	23	20	29	39	7	9	210
Station 2204	2	9	16	20	12	4	1	16	40	30	64	58	52	31	37	34	30	20	19	21	38	17	7	3	581
Station 2205	13	25	13	2	7	4	20	40	45	41	33	27	36	12	49	29	41	26	35	29	10	15	24	28	604
Total	**43**	**54**	**45**	**30**	**37**	**24**	**44**	**79**	**115**	**107**	**148**	**132**	**151**	**120**	**147**	**144**	**157**	**112**	**105**	**93**	**96**	**100**	**83**	**63**	**2229**

Ad-Hoc Report Example:

Name:	Positions				
Date:					1/1/2014
Description:					
PSAP 1					
Seizure Date	**Seizure Time**	**CallTypeId**	**Position ID**	**IsAbandoned**	**Duration Secs**
12/8/2013	00:15:00	911 Calls	7	FALSE	10
12/8/2013	00:15:37	911 Calls	11	FALSE	100
12/8/2013	00:29:32	911 Calls	11	FALSE	42
12/8/2013	00:46:56	911 Calls	7	FALSE	277
12/8/2013	00:54:04	911 Calls	8	FALSE	64
12/8/2013	00:56:32	911 Calls	8	FALSE	110
12/8/2013	01:01:57	911 Calls	8	FALSE	107
12/8/2013	01:02:31	911 Calls	7	FALSE	3519
12/8/2013	01:31:41	911 Calls	7	TRUE	27
12/8/2013	01:36:41	911 Calls	7	FALSE	214

Events Answered by All Positions: The events answered by all positions requirement will be fulfilled by use of the Event Summary report. This report will provide overall information regarding the number of events answered (regardless of position). If a user desires to look at all events answered across all stations, the Initial Station Total Events report will fulfill this need (see above).

Events Answered by User ID: If each operator uses a unique user ID, the user ID will be stored as 'Agent' and can be reported against in multiple ways. 'Agent' is an available ad-hoc field, the user can query against answer time by operator, by a specific shift, etc. In addition, operator reports are available such as 'Events by Operator' and 'Operator Speed of Answer'. These reports provide the number of events answered by each initial operator.

Events by Operator Report Example:

Operator	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	Total
OPERATOR 1	28	27	26	16	21	17	23	33	71	66	71	50	74	85	78	47	68	55	42	31	28	40	28	38	1063
OPERATOR 2	6	6	1	0	0	0	0	0	0	25	17	13	12	5	4	17	27	41	26	26	15	16	6	6	269
OPERATOR 3	17	21	16	8	12	7	6	43	44	39	41	47	54	49	53	68	74	54	52	37	48	37	27	25	899
OPERATOR 4	13	5	3	7	6	1	6	7	9	19	24	26	13	55	58	74	70	37	55	35	22	26	14	7	592
OPERATOR 5	10	8	9	5	1	4	7	14	23	30	21	28	19	19	16	29	16	14	13	19	5	5	5	5	325
OPERATOR 6	5	10	8	17	4	25	24	37	59	67	61	39	71	42	56	43	46	38	36	28	32	18	15	16	797
UNKNOWN OPERATOR	45	42	29	31	32	32	39	44	97	147	136	208	177	168	229	247	247	240	200	170	144	110	85	50	2949
Total	**124**	**119**	**92**	**84**	**76**	**86**	**105**	**178**	**303**	**393**	**371**	**411**	**420**	**423**	**494**	**545**	**548**	**479**	**424**	**346**	**294**	**252**	**180**	**147**	**6894**

Operator Speed of Answer Report Example:

Operator	Answer Times In Seconds					Total Events Answered	Average Duration
	0 - 10	11 - 20	21 - 60	61 - 120	120+		
UNKNOWN OPERATOR	82.40%	11.70%	5.43%	0.41%	0.07%	2949	83.8
OPERATOR 1	77.70%	17.31%	4.52%	0.38%	0.09%	1063	117.5
OPERATOR 2	87.36%	9.29%	3.35%	0.00%	0.00%	269	115.9
OPERATOR 3	80.65%	14.35%	4.67%	0.33%	0.00%	899	123.9
OPERATOR 4	83.28%	13.51%	2.53%	0.68%	0.00%	592	122.8
OPERATOR 5	80.92%	15.69%	3.08%	0.31%	0.00%	325	117.7
OPERATOR 6	81.18%	14.81%	3.89%	0.00%	0.13%	797	107.8
Overall Percentage:	**81.51%**	**13.52%**	**4.57%**	**0.35%**	**0.06%**	**6894**	**103.2**

Ad-Hoc Report Example:

Ad Hoc Report:				
Name:	Agent Answer Seconds			
Date:	1/1/2014			
Description:				
PSAP 1				
Seizure Date	Seizure Time	CallTypeId	Agent	Answer Secs
12/8/2013	00:15:00	911 Calls	OPERATOR 1	1
12/8/2013	00:15:37	Administrative	OPERATOR 2	3
12/8/2013	00:29:32	911 Calls	OPERATOR 1	2
12/8/2013	00:46:56	911 Calls	OPERATOR 1	1
12/8/2013	00:54:04	911 Calls	OPERATOR 3	5
12/8/2013	00:56:32	911 Calls	OPERATOR 2	1

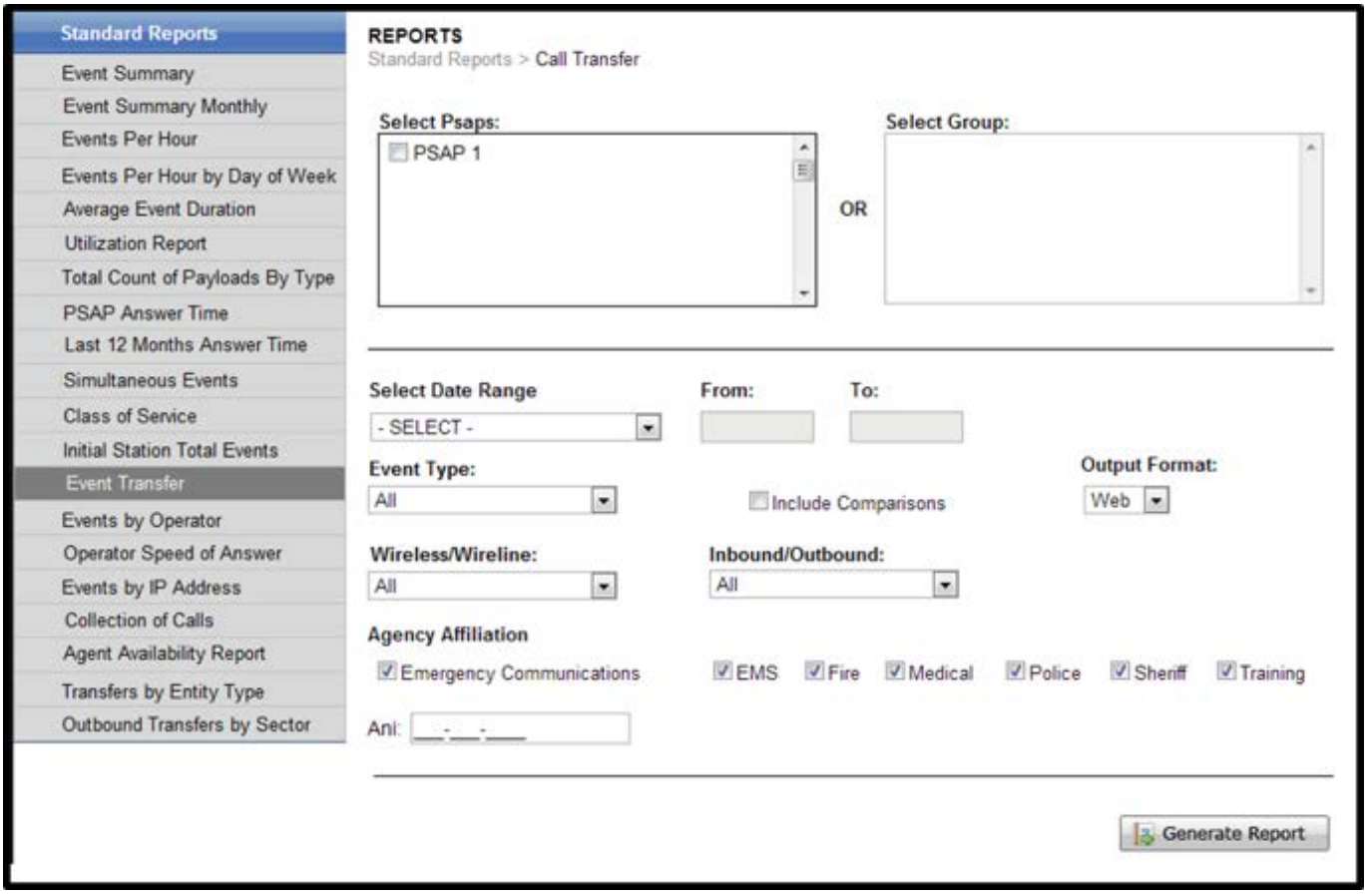
Events by Day of the Week: Event reporting by day of week is available through the Events per Hour by Day of Week report. This report provides event counts by day of week as well as by hour of day.

Events per Hour by Day of Week Report Example:

Mar-13									
CallHour	Summary	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
0	Total	76	35	46	34	35	41	58	325
	Events\Day	15.2	8.75	11.5	8.5	8.75	8.2	11.6	10.4
1	Total	58	30	27	19	12	36	62	244
	Events\Day	11.6	7.5	6.75	4.75	3	7.2	12.4	7.6
2	Total	40	14	14	13	18	36	44	179
	Events\Day	8	3.5	3.5	3.25	4.5	7.2	8.8	5.54
3	Total	28	18	14	13	26	24	38	161
	Events\Day	5.6	4.5	3.5	3.25	6.5	4.8	7.6	5.11
4	Total	14	15	23	23	28	29	33	165
	Events\Day	2.8	3.75	5.75	5.75	7	5.8	6.6	5.35
5	Total	29	16	12	19	21	19	28	144
	Calls\Day	5.8	4	3	4.75	5.25	3.8	5.6	4.6
6	Total	36	24	31	38	31	32	36	228
	Events\Day	7.2	6	7.75	9.5	7.75	6.4	7.2	7.4
7	Total	37	63	55	80	65	82	48	430
	Events\Day	7.4	15.8	13.8	20	16.3	16.4	9.6	14.2
8	Total	42	71	87	58	79	109	95	541
	Events\Day	8.4	17.8	21.8	14.5	19.8	21.8	19	17.6
9	Total	56	152	94	101	97	132	118	750
	Events\Day	11.2	38	23.5	25.3	24.3	26.4	23.6	24.6
10	Total	90	112	109	116	123	196	116	862
	Events\Day	18	28	27.3	29	30.8	39.2	23.2	27.9
11	Total	114	104	144	128	158	148	140	936
	Events\Day	22.8	26	36	32	39.5	29.6	28	30.6
12	Total	88	115	119	119	147	142	152	882
	Events\Day	17.6	28.8	29.8	29.8	36.8	28.4	30.4	28.8
13	Total	133	131	116	112	136	177	152	957
	Events\Day	26.6	32.8	29	28	34	35.4	30.4	30.9
14	Total	113	112	152	110	120	161	140	908
	Events\Day	22.6	28	38	27.5	30	32.2	28	29.5
15	Total	122	137	150	145	131	174	105	964
	Events\Day	24.4	34.3	37.5	36.3	32.8	34.8	21	31.6
16	Total	110	133	127	170	155	177	137	1009
	Events\Day	22	33.3	31.8	42.5	38.8	35.4	27.4	33
17	Total	125	148	102	151	122	140	126	914
	Events\Day	25	37	25.5	37.8	30.5	28	25.2	29.9
18	Total	128	110	120	130	118	126	129	861
	Events\Day	25.6	27.5	30	32.5	29.5	25.2	25.8	28
19	Total	122	93	108	86	96	148	128	781
	Events\Day	24.4	23.3	27	21.5	24	29.6	25.6	25.1
20	Total	116	72	72	126	95	130	91	702
	Calls\Day	23.2	18	18	31.5	23.8	26	18.2	22.7
21	Total	123	71	71	83	52	124	86	610
	Events\Day	24.6	17.8	17.8	20.8	13	24.8	17.2	19.4
22	Total	84	66	39	57	48	77	89	460
	Events\Day	16.8	16.5	9.75	14.3	12	15.4	17.8	14.6
23	Total	56	40	37	52	53	86	70	394
	Events\Day	11.2	10	9.25	13	13.3	17.2	14	12.6
Total	Total	1940	1882	1869	1983	1966	2546	2221	2223
	Events\Day	16.2	19.6	19.5	20.7	20.5	21.2	18.5	19.4

Events Transferred: Transferred events can be reported against in a variety of ways. The first is the Event Transfer report. The parameters interface for the 'Events Transferred' report will also feature a filtering option for 'Wireless' and 'Wireline' transfers.

The report interface will also feature a drop-down menu with three transfer options, 'All', 'Inbound' and 'Outbound'.



Necessary associated information such as location or class of service will be included, as well as seizure time at each PSAP and the duration at each PSAP. The Event Transfer report can be filtered by ANI to easily locate a specific event.

If an event is transferred multiple times, the chaining will be apparent in the report. As displayed below, a call with multiple transfers will appear as a chain with each row representing an appearance of that event at each PSAP.

Total Events Transferred: 3

		Location Information							Event Record Information				
	Event Type	ANI	Address Line 1	City	Class	ESN	Call Sector	Name	Call Type	PSAP	Seizure Date Time	Talk Secs	Duration Secs
Source	Voice Call	123-567-8910	ADDRESS 1	CITY 1	WPH2	123	CELL SECTOR 1	AT&T MOBILITY 800 123 5678	911 Calls	PSAP 1	12/12/2013 2:41:29 AM	74	80
Transfer To	Voice Call	123-567-8910	ADDRESS 1	CITY 1	WPH2	123	CELL SECTOR 1	AT&T MOBILITY 800123 5678	911 Calls	PSAP 2	12/12/2013 2:43:42 AM	217	225
											TOTAL:	291	305
Source	Text Call	555-555-1234	ADDRESS 2	CITY 2	WPH2	456	CELL SECTOR 2	AT&T MOBILITY 800 678 9876	911 Calls	PSAP 1	12/12/2013 8:05:57 AM	147	193
Transfer To	Text Call	555-555-1234	ADDRESS 2	CITY 2	WPH2	456	CELL SECTOR 2	AT&T MOBILITY 800 678 9876	911 Calls	PSAP 2	12/12/2013 8:07:58 AM	251	261
											TOTAL:	398	454
Source	Voice Call	123-789-1111	ADDRESS 3	CITY 3	VOIP	789	N/A	JOHN DOE	911 Calls	PSAP 1	12/12/2013 9:56:12 AM	63	94
Transfer To	Voice Call	123-789-1111	ADDRESS 3	CITY 3	VOIP	789	N/A	JOHN DOE	911 Calls	PSAP 2	12/12/2013 9:58:18 AM	146	154
Transfer To	Voice Call	123-789-1111	ADDRESS 4	CITY 3	VOIP	789	N/A	JOHN DOE	911 Calls	PSAP 1	12/12/2013 10:02:35 AM	36	43
Transfer To	Voice Call	123-789-1111	ADDRESS 4	CITY 3	VOIP	789	N/A	JOHN DOE	911 Calls	PSAP 3	12/12/2013 10:04:30 AM	28	35
											TOTAL:	295	326

In addition, transfer counts can be obtained through ad-hoc with the 'Transferred' field. Dialed transfer numbers will be stored for reporting purposes; this will allow any user to determine transfer counts to any outside entity through ad-hoc.

Ad Hoc Report:					
Name:	Transfers				
Date:	12/15/2013				
Description:					
PSAP 1					
Seizure Date	**Seizure Time**	**ALI ANI**	**CallTypeID**	**Transferred**	**Transfer Number**
12/8/2013	01:48:41	555-123-5678	911 Calls	TRUE	555-567-2637
12/8/2013	06:49:47	555-234-5678	911 Calls	TRUE	555-345-8674
12/8/2013	06:58:50	555-456-7819	911 Calls	TRUE	555-231-4657
12/8/2013	09:53:17	555-678-2221	911 Calls	TRUE	555-237-1239
12/8/2013	10:49:55	555-112-3321	911 Calls	TRUE	555-238-1298

Agent Availability Report: The Agent Availability Report provides information on each operator. Once selecting the 'Agent Availability Report' in the parameters screen, the user can select one or more operators (agents) to be included in the report.

Users will have the ability to build Agent Groups. These groups may contain one or more operators of the user's choice. An unlimited number of groups can be built (for example, to address each shift). The report includes for the entire specified date range:

1. The number of total hours worked
2. Average Not Ready time per hour (mm:ss format)
3. Average Wrap Up time per hour (mm:ss)
4. Average Ready (Idle) Time per hour (mm:ss)
5. Average Number of Calls per hour

Agent Availability Report Example:

Operator Name	Total Number of Hours Worked	Average Not Ready Time Per Hour (mm:ss)	Average Wrap Up Time Per Hour (mm:ss)	Average Ready Time Per Hour (mm:ss)	Average Number of Calls Per Hour
OPERATOR 1	8	13:15	05:06	43:12	12
OPERATOR 2	40	16:15	07:34	34:28	10
OPERATOR 3	30	20:23	10:13	30:45	2
Totals	**78**	**16:38**	**07:38**	**36:08**	**24**

Call Volumes: 911, 10-Digit Emergency and Administrative call volume can be obtained in a single report, the Event Summary Report. The user will select the report, select 'call' as the Event Type, and then will be presented with call type options for the report. The Event Summary report contains wireless 911 and wireline 911 call counts, abandoned call counts, outbound call counts, overall totals and average call duration.

The event type (and all other parameters selected) will be listed in the report header, as depicted below:

Date	Wireless 911	Wireline 911	911	911 Abdn	Unparsed 911	Total 911	911 Abdn Percentage	Average Call Duration
12/1/2013	10	40	50	6	0	56	10.71%	118.6
12/2/2013	13	60	73	6	0	79	7.59%	69.0
12/3/2013	18	50	68	11	0	79	13.92%	75.7
12/4/2013	16	40	56	9	1	66	13.64%	64.2
12/5/2013	1	50	51	14	0	65	21.54%	59.0
12/6/2013	13	60	73	6	1	80	7.50%	85.6
12/7/2013	8	60	68	14	0	82	17.07%	84.9
PSAP Totals	**79**	**360**	**439**	**66**	**2**	**507**	**13.02%**	**78.8**

Individual Call Information: Each call and its associated information can be obtained through the ad-hoc system. The user can query by using specific filters, or by including all information in the report. In this way, the user can obtain thorough information on each individual call.

In addition, after generating the 'Drill-Down' report, a user may click a call on the report. Upon clicking the desired call, an 'Individual Call Information' report will open in a new window.


Individual Call Detail
Generated: mm/dd/yyyy hh:mm:ss

Seizure Date Time: mm/dd/yyyy hh:mm:ss
Call Type: 911
Inbound/Outbound: Inbound
Abandoned: No
Answer seconds: 3
Duration seconds: 123
Position answered: 6
Operator answered: Operator 1
Transferred: No
Transfer records: N/A
ANI: 555-123-5678
Location information: Address 1, City, State, Zip Code, XY Coordinates
Class of Service: WPH2
Carrier: Carrier1

Raw Data:

<xmlexample>

Collection of Calls: This report will provide call detail on all calls for the date range selected. The report detail will include:

1. Seizure Time
2. Call Type
3. Inbound/Outbound
4. ANI

Seizure Date Time	Call Type	Inbound/Outbound	ANI	Individual Call Detail
01/01/2013 00:06:34	911	Inbound	555-111-2222	Click
01/01/2013 06:08:24	Admin	Outbound	555-111-3333	Click
01/01/2013 13:01:04	911	Inbound	555-222-4444	Click
01/01/2013 15:45:23	911	Inbound	555-222-1111	Click
01/01/2013 16:17:34	911	Inbound	555-333-2222	Click
01/01/2013 21:09:12	911	Inbound	555-333-4444	Click
01/01/2013 23:12:45	Admin	Inbound	555-333-4444	Click

Once the report is generated, and calls have populated in the report, the user then has the ability to click on each report in the list. Clicking into a particular call will open a new report with individual call detail. This 'Individual Call Detail' report will provide all information associated with the call, including the raw XML data.

Individual Call Detail Report Example:

Individual Call Detail
Generated: mm/dd/yyyy hh:mm:ss

Seizure Date Time: mm/dd/yyyy hh:mm:ss
Call Type: 911
Inbound/Outbound: Inbound
Abandoned: No
Answer seconds: 3
Duration seconds: 123
Position answered: 6
Operator answered: Operator 1
Transferred: No
Transfer records: N/A
ANI: 555-123-5678
Location information: Address 1, City, State, Zip Code, XY Coordinates
Class of Service: WPH2
Carrier: Carrier1

Raw Data:

<xmlexample>

Summary of Call Loads: Summary of Call Loads can be addressed in multiple ways. The first is call volume. Call volume can be addressed through the Event Summary report as detailed above. In addition, call loads can be reported on in terms of the PSAP's ability handle a certain number of incoming or active calls at any given time. The 'Utilization Report' provides data on the percentage of time in a given data range that multiple SIP trunks are in simultaneous use. This provides information as to whether the PSAP continually has ability to handle incoming calls (particularly in a high volume situation), or if the PSAP encounters times where no incoming calls will be accepted.

Utilization Report Example:

Group Name	Trunks Busy	Busy
911 GROUP	1	0.538233 %
	2	0.000270 %
	Total SIP Trunks: 2	

5.3.1 EVENT REPORTS

Response: Comply

ECaTS will provide an i3 compliant logging service interface which aggregates logs from the Network (ex: an ESINet) and the Call Handling System to support end to end transaction logging and retrieval. ECaTS is optimized as a "transaction logger", capturing metadata for all payloads to provide end to end reports. ECaTS is compliant to the i3 specification for recording of the transaction metadata. All times captured and computed use the NG-911 international UTC standard and ECaTS will synchronize with the network clock used by all NG Functional Elements to ensure synchronized time.

ECaTS supports an i3 compliant web services interface in addition to the standard web interface for retrieval of reporting and data. All significant steps in processing a call are logged by the Network devices/services and call handling systems and submitted to the ECaTS logger. Each log contains a transaction ID to support log aggregation for end to end reporting. The ECaTS logger web services conforms to NENA 8-003 v1 Detailed Functional and Interface Specification for the NENA i3 Solution, Stage 3 Version 1.

ECaTS supports two options for State and PSAP users to access and retrieve i3 transactions and events. The primary method is via the web interface which allows PSAPs to review and retrieve MIS and i3 Log Replication through the current NG SOAP interfaces.

Access to the log replication web services are an add-on as all reporting features are provided through the ECaTS MIS portal. Should the log replication services be licensed, the following web services are implemented as defined by the NG-911 V1/V2 specifications.

5.12.1.2 RetreiveLogEvent
5.12.1.3 ListEventsByCallId
5.12.1.4 ListEventsByIncidentId
5.12.1.5 ListCallsByIncidentId
5.12.1.6 ListIncidentsByDateRange
5.12.1.7 ListIncidentsByLocation
5.12.1.8 ListIncidentsByDateAndLocation
5.12.1.9 ListCallsByDateRange
5.12.1.10 ListAgenciesByCallId
5.12.1.11 ListAgenciesByIncidentId

As described above, The ECaTS platform provides general reporting against the collected network data. Additional customized reporting can be created depending on the needs of the Alabama 9-1-1 Board, but included are the following reports:

Time of payload entry through BCF: Time of Payload Entry through BCF report is shown below. Users can search by a specific time, include or filter by additional desired information, or receive all BCF entry times for a desired time/date range.

Ad Hoc Report:	
Name:	Time of Payload Entry Through BCF
Date:	1/9/2013
Description:	
PSAP 1	

Seizure Date Time
2013-10-26T03:14:34Z
2013-10-26T04:11:24Z
2013-10-26T04:38:40Z
2013-10-26T05:23:12Z

Time for each functional element to perform routing and PSAP assignment: End to end Routing Report provides information regarding routing performance and PSAP assignment as shown below. This data is also available for ad hoc reporting. Users can search by a specific event, include or filter by desired information, or receive all ECRF routing assignment times for a desired time/date.

Network Request - Response Times			
Date	Responding Device	Requesting Device	Average Duration
2014-01-01	LIS #1	LNG #1	09:22
		LNG #2	03:22
		ESRP Orig.	04:11
Average Response	ECRF	LNG #1	05:38
		ESRP Orig.	09:22
		ESRP Term	03:22
Average Response			05:38

Time of answer at PSAP: Answer time is calculated from seizure to event answer. This is a field included on the Average Duration report, and is also used to create the PSAP Answer Time report using data supplied by the Call Handling system. In addition, time of answer at PSAP is a value available for reporting in the ad-hoc system.

Answer Time Report Example:

Summary Call Flow							
Answering Call Center	Call Count	LIS Lookup Duration	Routing Duration	Queue Duration	Answer Duration	Total Time Prior to Talk	Total Call Duration
Boston	3,543	0:02	0:04	0:21	0:02	0:29	1:31
Marlboro	3,543	0:02	0:04	0:11	0:02	0:19	1:32
Totals	**7,086**						
Averages		**0:02**	**0:04**	**0:16**	**0:02**	**0:24**	**1:31**

Marlboro							
ANI	Call Type	LIS Lookup Duration	Routing Duration	Queue Duration	Answer Duration	Total Time Prior to Talk	Total Call Duration
508-323-3232	WRLS	0:02	0:04	0:21	0:02	0:29	1:31
508-876-6666	Abandoned - WP2	0:02	0:04	0:21	0:00	0:11	0:00
508-876-6666	SMS	0:02	0:04	0:11	0:02	0:19	1:43
Averages		**0:02**	**0:04**	**0:17**	**0:01**	**0:19**	**1:04**

Time of disconnect at PSAP: The Disconnect time, or total call duration, can be found in the above report. In addition, PSAP specific reports also include this information in numerous other reports and via ad hoc reporting.

5.3.2 MAINTENANCE / CONFIGURATION REPORTS

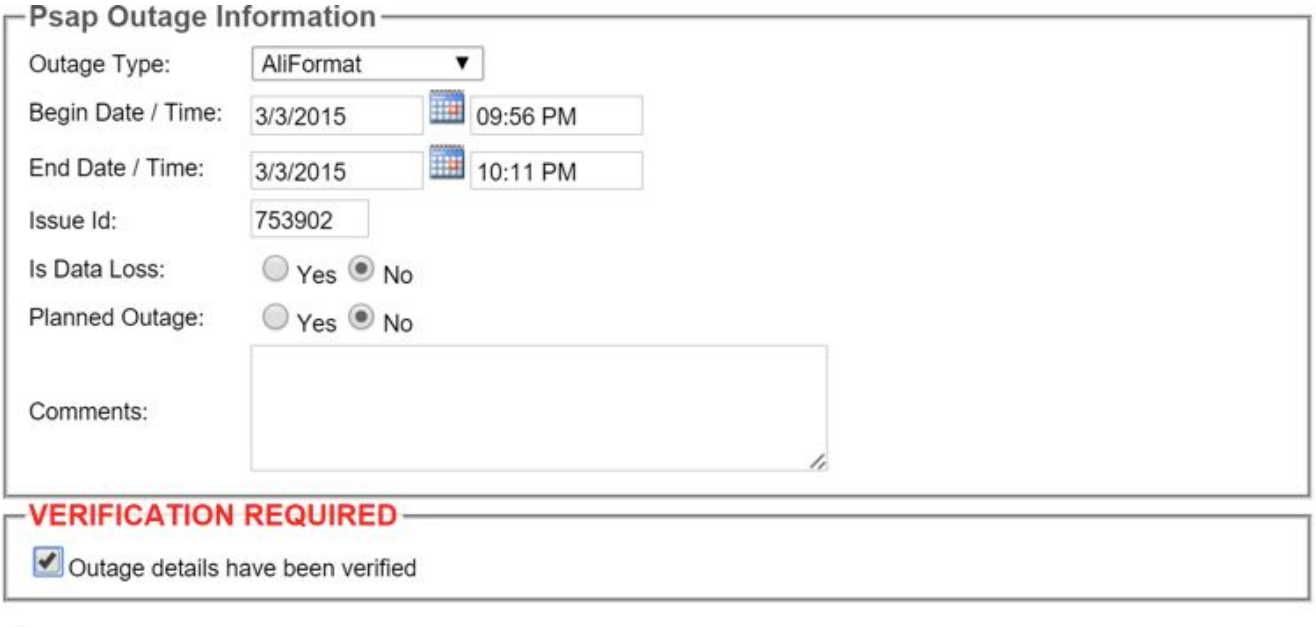
Response: Comply

ECaTS provides all detailed maintenance and configuration updates based on system health reporting of issues causing data gathering challenges. ECaTS provides a summary screen of all issues affecting a specific PSAP or a data collector and the ability to drill down into the details of each issue and follow the resolution path and overall results of the maintenance/configuration issue.

Below is a sample of the maintenance/configuration events list with date/time ranges:

	Outage Type	Begin Date/Time	End Date/Time	Duration	Data Loss?	Issue Id
	Heartbeat	10/1/2015 5:44 AM	10/1/2015 6:17 AM	33 minute(s)	No	828144
	Heartbeat	9/30/2015 10:31 PM	9/30/2015 11:17 PM	46 minute(s)	No	827595
	Heartbeat	5/1/2015 4:46 PM	5/1/2015 7:17 PM	2 hours and 30 minute(s)	No	774844
	CallVolume	4/17/2015 5:55 AM	4/20/2015 2:51 PM	3 days and 8 hours and 56 minute(s)	Yes	767734
	AliFormat	3/3/2015 9:56 PM	3/3/2015 10:11 PM	15 minute(s)	No	753902
	CallVolume	2/24/2015 2:58 PM	2/26/2015 2:27 PM	1 day and 23 hours and 29 minute(s)	Yes	752170
	Heartbeat	2/1/2015 4:06 AM	2/1/2015 4:43 AM	37 minute(s)	No	745275
	Heartbeat	11/5/2014 5:34 AM	11/5/2014 6:09 AM	34 minute(s)	No	719540
	CallVolume	9/28/2014 1:10 AM	9/30/2014 11:59 PM	2 days and 22 hours and 49 minute(s)	Yes	708131
	CallVolume	10/1/2014 12:01 AM	10/6/2014 12:44 PM	5 days and 12 hours and 43 minute(s)	No	706605
	Heartbeat	9/3/2014 5:58 PM	9/3/2014 6:55 PM	56 minute(s)	No	699064

For each maintenance/configuration event that is present on the output, clicking the "pencil" icon provides a drill down into a particular issue, below is a sample of the AliFormat issue details:


Psap Outage Information
Outage Type:
AliFormat
Begin Date / Time:
3/3/2015
09:56 PM
End Date / Time:
3/3/2015
10:11 PM
Issue Id:
753902
Is Data Loss:
Yes
No
Planned Outage:
Yes
No
Comments:
VERIFICATION REQUIRED
Outage details have been verified

SECTION 6 SERVICE/SUPPORT REQUIREMENTS

6.1 CUSTOMER SUPPORT SERVICES

Response: Comply

SLA's for the project will need to include the individual requirements of the ANGEN board. INdigital will provide starting point SLA's at the appropriate time.

All FEs and network connections in the proposed response are redundant and deployed as "mated pairs". This provides continuity of service across the ESiNet and ensures full delivery of service in the event of a single NE, FE or OSP connection failure where redundancy is technically or economically available.

INdigital will be the "single point of contact" for service requirements. All services will have an integrated service center approach. All providers associated with this response will jointly refer open issues and work together for resolution. A single help desk will cover:

- both transitional network, the i3 ESInet NE's, and all FE's
- CPE related operations, administration adds, moves, and changes.

Each vendor in this proposal has agreed to electronic bonding to share ticketing information and work together to resolve service issues. This ensures that ANGEN staff will not be in the middle trying to determine root cause of a problem and who owns the required resolution.

RPSS technicians are in market, will be trained on the INdigital ecosystem of NEs FEs, and will be equipped to coordinate troubleshooting activities for the ANGEN ESiNEt.

- Service Desk – a 24x7 Help Desk providing access to Tier 1-3 support services. The Service Desk will coordinate all activities related to the proposed solution.
- Monitoring – an advanced monitoring solution, consisting of:
  - ❏ SNMP monitoring for hardware failures
  - ❏ QoS and network performance monitoring
  - ❏ Application specific alerts to monitor software performance
  - ❏ Notification – critical and major alerts will be provided, as well as regular updates and coordination of dispatch needs when assistance is needed.

- Web Portal – a real-time view of the network, with drill-down capability to a specific device. The portal will allow ANGEN and AL PSAPs to cooperatively view and track manage the solution.

6.2 HELP DESK

Response: Comply

INdigital operates a 24x7x365 quality resolution center (QRC). The QRC offers multiple levels of the technicians with service backgrounds in all elements of 9-1-1 services. QRC technicians can typically can resolve most issues, but when they can't, we offer 3 tiers of on-call technicians to resolve the matter.

In the very unlikely situation that an issue isn't being resolved in a timely manner, INdigital provides customers with an In Case of Emergency (ICE) number to escalate support issues directly to management.

In addition to taking calls, INdigital also offers an online trouble ticketing system complete with ticket history, technician notes, and customer notices of ticketing updates.

For PSAP equipment or host ESiNet related onsite repair. INdigital has partnered with Ryan Public Safety Solutions (RPSS) to operate as our in-market support team.

RPSS is a leading Alabama 911 support and equipment provider since 2006 . RPSS will have a direct line to INdigital support 24x7x365 to exceed the requirements of our Alabama customers.

6.3 TROUBLE HANDLING AND TICKETING REQUIREMENTS

Response: Comply

Root Cause Analysis reports are prepared with full transparency - often during the event or incident - and with real-time visibility to qualified stakeholders. For class 2 and class 1 events, senior management is engaged. INdigital uses an incident command protocol for events of this class.

Audio recordings (or direct participation) in these class of events are also captured and available to qualified stakeholders to provide full transparency of the company's actions and adherence to established protocol and procedures.

Trouble tickets are created by stakeholder initiation by voice, web or other messaging in an online web based system. The ticket initiator (or other authorized stakeholder) has full visibility of the ticket and its associated resolution and work effort.

All tickets are electronically processed, and are managed by the QRC, who ensure resolution is reached prior to closeout. Tickets are resolved the appropriate

department, and all staff have their work assignments and workflow integrated with the platform. Tickets can also be automatically generated by the NSR platform, and inversely, are displayed on the dashboard view of NSR.

A comprehensive analysis of all tickets is performed by QRC management as part of a routine monthly reporting process. Additionally, detailed graphic representations of ticketing trends is prepared for the Board reports, and senior management reviews these compilations to observe and report on any emerging trends.

6.4 TRAINING

Response: Comply

Our design and operations objective is to create systems that minimize the training burden. The ticketing and reporting systems have been developed and refined over many years based on user input.

Each service platform has built in help screens and hover balloons. Video training tutorials have been created by the company, and are available online. In addition, the company makes extensive use of guided web based training. On site training is also provided on a train the trainer basis, as well as individual and classroom structured training.

The company has a highly qualified full time training staff that also provide many types of system and industry training as part of a comprehensive outreach program. This staff has extensive work experience in the PSAP, in addition to being highly regarded within the industry for their skills and competency.

The training department is fully integrated into field support and technical operations, and have direct access to senior management.

For the State of Alabama RFP, training will be focus on these core services provided by INdigital.

- Trouble Ticketing
- Escalation
- Equipment installed at the PSAP
- Expected PSAP maintenance procedures
- Call Failover Router
- Disaster Recovery solutions MEVO
- Text to 911

Training will be coordinated by INdigital in regional, onsite, Alabama 911 statewide and other industry events, as well as with individual PSAPs if needed.

By way of example, we also submit these samples of online training:

The URL for text-from-911 (outbound) training is https://goo.gl/4E4qIK - expanded fully as (https://youtu.be/VvgkDd283IM)

The URL for Inbound text-to-911 (inbound) training is: https://goo.gl/4sJNfw expanded fully as https://youtu.be/P8iHAAZ8X-Y)

Additional examples of training for the MEVO disaster recovery platform are online trianing at this URL: https://goo.gl/eQVTFf exapnded fully as: https://www.youtube.com/watch?v=iDRU4U0Y9g8&feature=youtu.be

Additional examples are contained in Appendix "MEVO".

6.5 MONITORING OF APPLICATIONS AND EQUIPMENT

Response: Comply

INdigital utilizes multiple systems to create a full service monitoring solution. The Network Sentinel Reporter (NSR) is INdigital's NG911 monitoring dashboard platform. NSR supports both active monitoring and passive collection of events from NE's and FE's. Monitoring is performed at the system level and application level (if applicable).

ESInet wide monitoring also consists of call simulation to ensure continued FE integrity and operation. NSR provides dashboard applications for QRC / NOC, operations and administrative personnel for real time network awareness.

- NSR provides Application and system usage monitoring, combined with network monitoring views
- NSR also interfaces with the INdigital data warehouse for log analysis.
- In addition to monitoring it tracks performance metrics for historical analysis
- Visual dashboards quickly convey ESiNet status and performance
  - Network performance management
  - Fault prevention and capacity planning
  - Events and alerts at the granular level
  - Realtime reporting on device performance and availability
  - Asset and hardware inventory tracking
  - Mapping per device group
  - utilized netflow/ipfix for traffic categorization and endpoint detection

- bandwidth usage
- network and system latency
- system and device status
- packet errors and packet discards to identify potential bottlenecks and irregularities
- content verification against your intranet and internet web servers – speed and size, name resolution time, and content validation
- IP usage and allocation
- CPU, file system, memory
- software versions
- change control and revision management

6.6 NETWORK OPERATIONS CENTER

Response: Comply

In this proposal, we described the QRC as an operating division of INdigital. Additionally, we have described the NSR and trouble ticketing platform, and the integration of all of these platforms.

We are proposing that legacy NOC and the NMS platform will be fully integrated and also combined with the function of help desk, stakeholder notification and escalation.

In operation, we are proposing the creation of a single point of contact with all resources to:

- Monitor the operation of the ANGEN network.
- View, process, administer, follow up and report on all internal and stakeholder
- created trouble tickets.
- Prioritize events and incidents in compliance with the requirements
- Establish event and incident command in compliance with operating policy and protocols.
- Take action as appropriate from the written disaster recovery plan

It is our intent to take our network operations and stakeholder support to the next level of quality assurance.

6.7 ALARM CATEGORIES

Response: Comply

Alarms are received by technicians via email, text message, and visual notice within INdigital monitoring system dashboards. Alarms are classified at Critical, Major, Minor, and informational.

INdigital has created a company policy based on the rule of "3". If 3 or more PSAPs are affected, if 3 or more technicians are involved or if 3 or more systems are in alarm, the company takes immediate action for stakeholder impact assessment and escalation of the issue.

Once the issue has been escalated, INdigital engineers and managers evaluate the issue, document our response, and notify the stakeholders of the issue until service is restored.

6.8 SCHEDULED MAINTENANCE

Response: Comply

INdigital has developed a comprehensive scheduled maintenance program that is segmented to the class and location of the NE and FE. This program centers on the creation of an industry standard based naming convention known as Common Language Functional Element / Network Element (CLFE and CLNE).

FEs and NEs are grouped into descriptive categories, and expected failure modes are forecasted based on experience. Maintenance and testing intervals are combined with an INdigital Work Safety Plan for testing. Both invasive (network destructive) and noninvasive tests are scheduled.

Based on our work to refine the testing plan and approach, all active CLFE's are inventoried in the record keeping system, and the maintenance history of these NE's and FE's are available to qualified stakeholders.

SECTION 7 ELECTRICAL, WIRING, AND CABLE REQUIREMENTS

7.1 ELECTRICAL

Response: Comply

7.2 ELECTRICAL INTERFERENCE

Response: Comply

7.3 WIRING AND CABLING

Response: Comply

7.4 GROUNDING

Response: Comply

7.5 TRANSIENT VOLTAGE SURGE SUPPRESSION

Response: Comply

SECTION 8 PROJECT MANAGEMENT AND PLANNING REQUIREMENTS

8.1 IMPLEMENTATION PROJECT PLAN

Response: Comply

There are certain aspects of the ANGEN system disclosed in the RFP. Specific details have not yet been provided in the interest of security and perhaps even availability of accurate information. INdigital classifies this current state of the RFP process as a 'known unknown'.

For this reason, and knowing that one of the objectives is to reuse all of the 'good parts' of the current ANGEN network, we have not prepared a detailed project plan, but commit to full compliance with the requirement.

In general terms, INdigital's approach will be as follows. Many of these tasks will need to be conducted in parallel, and many have unknown dependencies:

A. Inventory and assess the working network cooperatively with Bandwidth, the current ANGEN 911 provider and the ANGEN board.
B. Develop Interconnection agreements and other Commercial Agreements as determined from the initial assessment.
C. Perform an assessment on the current co-location sites, and determine if they meet the ongoing project requirements.
D. Determine the FE needs assessment and preliminary network design, including:
    a. IP network availability and suitability to the ANGEN project.
    b. TDM network availability as it relates to the ANGEN project.
    c. Determine the method of procedure for the transition of the existing OISP SS7 network.
    d. Determine the status of the PSAPs as it relates to CPE and training needs.
E. Formulate a preliminary work plan for review by the ANGEN Board, refine as needed.
    a. Socialize this plan with the PSAPs, continue refinement as needed.
F. Complete the transition of the current ANGEN network to the new architecture.

    a. Complete all test plans as needed to ensure mutual objectives have been met.

G. Begin the final planning and deployment of the PSAP facing IP ESiNet network elements.

    a. Refine and begin deployment of the ANGEN ESiNEt to connect the PSAPs to the ESiNet.

H. Turn up all supporting additional services, such as:

    a. IP delivered ALi data

    b. Reporting system CPE data collection platform.

I. Conduct extensive failover and system survivability testing, implementation of PSAP backup plans and related

J. Add new services (such as text-for-911) to the ESiNet

    a. Provide additional training for the PSAPS for new services and the new network configuration.

K. Complete final steps as directed by the ANGEN Board.

INdigital has provided an example Gantt chart of this preliminary work plan below. A more detailed view is attached as Appendix “Gantt”.

Alabama Statewide deployment

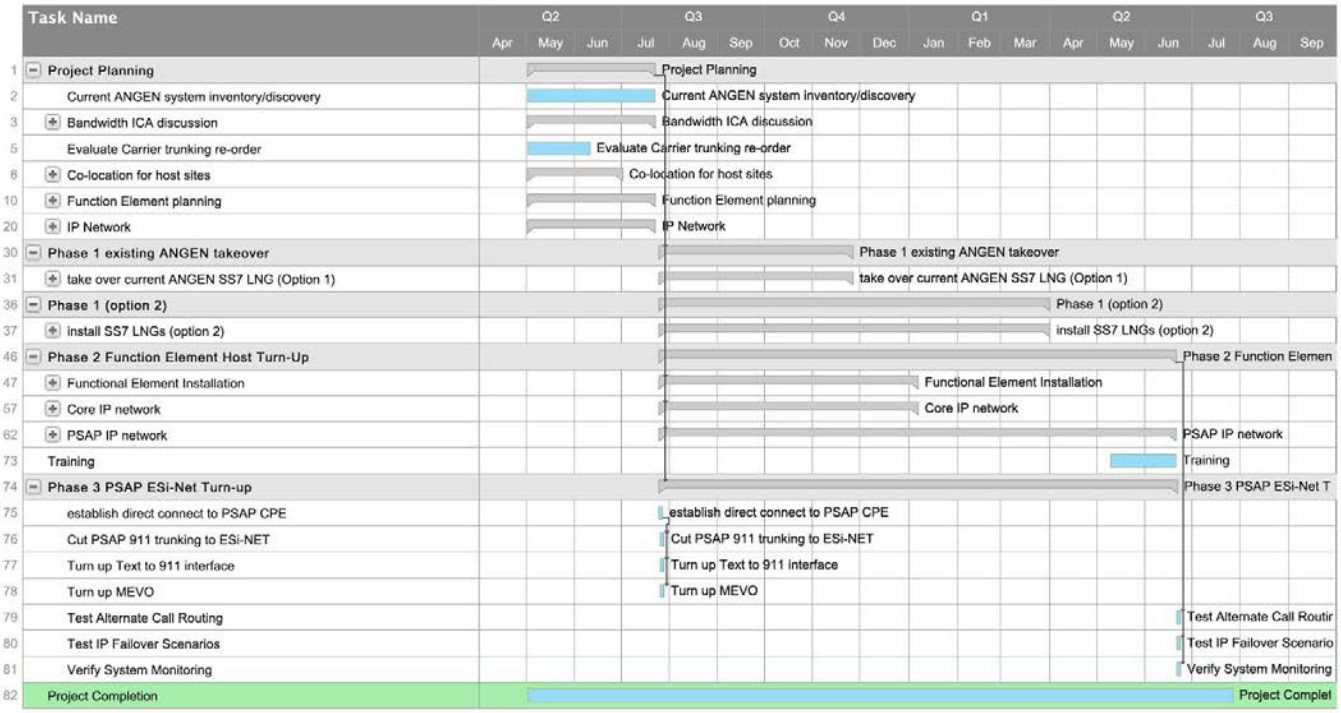


Figure 13 - Sample project Gantt chart

8.2 SYSTEM TEST PLAN

Response: Comply

See also our response in 8.1

8.3 TRANSITION PLAN

Response: Comply

The company has extensive experience in making sure projects stay on track, and our references can provide many examples of this capability.

8.4 SERVICE MANAGEMENT PLAN

Response: Comply

INdigital has a long history of network evolution and updates using the ITIL process. Individual FEs are continually improved and refined based on customer and end user input.

1.The best designs require continual compromise, price fit, and ongoing analysis to provide the best possible level of service from day 1 until the last day of the contract.

2. The achieve this level of service achievement we follow the ITIL continual service improvement guidelines.

3. ITIL requires constant evaluation of the service environment, analysis of possible service improvements, implementation of improvements, final documentation of improvements, and then ongoing support of upgraded systems.

Certain classes of users always emerge as 'beta testers' for new service offerings, refinements and enhancements.

Baseline performance of the ESiNets we provide is ensured through routine testing and monitoring. SLAs compliance monitoring and system events (including those caused by third parties) always present an opportunity to improve the ESiNet.

Our goal in this response is the same as the ANGEN board and the PSAPs the ESiNet serves. And make the best better.

NETWORK OPERATIONS SLA

1. Network Operations Definitions

a) Outage. Outage means the measure of the time that Customer loses a signal or receives a signal so poor

b) Chronic Trouble. Chronic Trouble exists when either:

(i) Three (3) or more separate periods of service interruption occur on INdigital's physical network within the same calendar month; or

(ii) Service interruption on INdigital's physical network occurs in excess of two (2) hours in three (3) consecutive months.

In the event that Customer experiences chronic service interruption, the Customer shall be entitled, in addition to any applicable credits, to request re-provisioning of the affected circuit and/or terminate the affected Service without charges as defined in Article 9 (Termination).

Chronic Trouble will not be deemed to have occurred in the event that it arises from or relates to any of the following:

(i) the negligence, error, acts or omissions of Customer or others authorized by Customer, including but not limited to its End User Customer;

(ii) a Force Majeure event;

(iii) a breach by Customer of its obligations under this Agreement;

(iv) a result of Planned Maintenance; or

(v) an Outage due to Customer's or its End User Customer's network failure.

A termination request must be made in writing and shall be Customer's sole and exclusive remedy.

c) Planned Maintenance or Repair. Planned Maintenance or Repair includes network upgrades and repairs, equipment upgrades and repairs, power upgrades and repairs.

d) Emergency Maintenance or Repair. Emergency Maintenance or Repair refers to work which, if not accomplished immediately by INdigital or third-party provider, could result in a serious degradation or loss of Service to the Customer or the End User Customer. Emergency maintenance or repair includes network, equipment and power facilities.

Network availability will be a measure of the relative amount of time during which the service is available for use. Customer acknowledges that INdigital may need to perform Planned Maintenance or Repair to the network between the hours of 12:00 midnight and 6:00 AM local time.

Such Planned Maintenance or Repair is acknowledged to not be considered for overall measurement of availability.

2. Credit. In the event of an interruption of service, Customer shall be entitled to a credit as determined according to the corresponding Service Schedule. The length of the interruption shall be measured in hours and fractional portions thereof. Each interruption shall be deemed to terminate upon restoration of the affected Services as evidenced by appropriate network test by INdigital, and INdigital's notification to Customer.

This credit shall be Customer's sole and exclusive remedy for any failure by INdigital to meet a performance metric according to the corresponding Service Schedule's Technical Standards of Performance. To receive credit, Customer must make a written request within forty-five (45) days of the end of the month for which the interruption occurred. INdigital may withhold issuance of any credits due Customer under this Agreement until any amounts past due by Customer have been paid in full.

3. Exclusions. Service interruption credits do not apply to outages:

(i) caused by the negligence or willful misconduct of the Customer;

(ii) due to failure of power (excluding any industry standard back-up power sources that INdigital is required to have in place);

(iii) during any period in which

INdigital is not given access to the Customer or Customer's end-user's premise if necessary to Proprietary & Confidential INdigital Telecom resolve an outage; (iv) during any period of scheduled maintenance, alteration or implementation ; and (v) during any Force Majeure Event.

4. Point-of-Contact. INdigital shall maintain a twenty-four (24) hours a day, seven (7) days a week point-of-contact for Customer to report to INdigital system troubles.

5. Escalations. INdigital shall provide an explicitly named list, including direct contact information, of operations management contacts for purposes of trouble resolution escalations.

6. Maintenance and Repairs. INdigital shall perform all trouble maintenance and repair functions on its system and facilities from the end-user's premise to the demarcation point at the Customer facilities twenty-four (24) hours per day, seven (7) days per week.

7. Response Time. In the event of a service interruption, INdigital will use commercially-reasonable efforts to have repair personnel on-site within four (4) hours from either the point at which INdigital notices the service impairment or after receiving such notification from Customer, whichever comes first.

8. Planned Maintenance or Repair

   a) Maintenance Window. Planned Maintenance is performed during a maintenance window of 12:00 midnight to 6:00 AM local time.

   b) Notification. INdigital will provide Customer with written notice of any Planned Maintenance or Repair as described in this Agreement by means of electronic mail notification to support@indigital.net no less than five (5) days prior to starting work. Customer agrees to acknowledge receipt of the written notification within two (2) business days of receipt confirming that Customer is aware of the planned work and has taken necessary steps to notify key personnel internally of when work will begin. If no response is given by Customer, acknowledgement will be deemed given. Customer must notify INdigital of any changes to its electronic mail notification address for such maintenance notifications. Changes may be emailed to support@indigital.net

9. Emergency Maintenance or Repair

   Where prior notice is not practical in the circumstances, INdigital reserves the right to perform required Emergency Maintenance or Repairs. Whenever prior notice is given, Customer agrees to acknowledge notice of the emergency event in a reasonable period of time and in all events Customer will take necessary steps to notify key personnel internally in order for INdigital to correct or repair the affected area.

- Nothing Follows -

Alabama Statewide deployment

	At Risk	Task Name	Start Date	End Date	Duration	Predecessors
1		**Project Planning**	**05/02/16**	**07/22/16**	**60d**	
2		Current ANGEN system inventory/discovery	05/02/16	07/22/16	60d	
3		Bandwidth ICA discussion	05/02/16	07/22/16	60d	
4		Bandwidth re-assign network assets to INdigital	05/02/16	07/22/16	60d	
5		Evaluate Carrier trunking re-order	05/02/16	06/10/16	30d	
6		Co-location for host sites	05/02/16	07/01/16	45d	
7		Birmingham	05/02/16	06/10/16	30d	
8		Montgomery	05/02/16	06/10/16	30d	
9		Other POI	05/02/16	07/01/16	45d	
10		Function Element planning	05/02/16	07/22/16	60d	
11		ESRP	05/02/16	07/22/16	60d	
12		MSRP	05/02/16	07/22/16	60d	
13		ECRF/ERDB	05/02/16	07/22/16	60d	
14		BCF	05/02/16	07/22/16	60d	
15		SBC	05/02/16	07/22/16	60d	
16		Core Routers	05/02/16	07/22/16	60d	
17		LNG	05/02/16	07/22/16	60d	
18		PRF/ Call Routing	05/02/16	07/22/16	60d	
19		Call Statistic Data Collection	05/02/16	07/22/16	60d	
20		IP Network	05/02/16	07/22/16	60d	
21		Core Network	05/02/16	06/10/16	30d	
22		evaluate additional IP network redundancy	05/02/16	06/10/16	30d	
23		Bandwidth Requirements	05/02/16	06/10/16	30d	
24		Failover/redundancy strategy	05/02/16	06/10/16	30d	
25		Diversity strategy	05/02/16	06/10/16	30d	
26		PSAP Network	05/02/16	07/22/16	60d	
27		provider evaluation	05/02/16	07/22/16	60d	
28		diversity strategy	05/02/16	07/22/16	60d	
29		failover strategy	05/02/16	07/22/16	60d	
30		**Phase 1 existing ANGEN takeover**	**07/25/16**	**11/25/16**	**90d**	**1**
31		take over current ANGEN SS7 LNG (Option 1)	07/25/16	11/25/16	90d	
32		Re-assign Point Codes to INdigital	07/25/16	11/25/16	90d	
33		Re-assign CLLI Codes to INdigital	07/25/16	11/25/16	90d	
34		Re-assign current interconnection agreements	07/25/16	11/25/16	90d	
35		Re-assign current network cost to INdigital	07/25/16	11/25/16	90d	
36		**Phase 1 (option 2)**	07/25/16	03/31/17	180d	
37		install SS7 LNGs (option 2)	07/25/16	03/31/17	180d	

	At Risk	Task Name	Start Date	End Date	Duration	Predecessors
38		host site Birmingham	07/25/16	03/31/17	180d	
39		SS7 code assignment	07/25/16	03/31/17	180d	
40		re-order (ingress) wireless trunks	07/25/16	03/31/17	180d	
41		re-order (egress) trunks to LEC SR's	07/25/16	03/31/17	180d	
42		host site Montgomery	07/25/16	03/31/17	180d	
43		SS7 code re-assignment	07/25/16	03/31/17	180d	
44		re-order (ingress) wireless trunks	07/25/16	03/31/17	180d	
45		re-order (egress) trunks to LEC SR's	07/25/16	03/31/17	180d	
46		**Phase 2 Function Element Host Turn-Up**	**07/25/16**	**06/20/17**	**237d**	
47		Functional Element Installation	07/25/16	01/06/17	120d	1
48		ESRP	07/25/16	01/06/17	120d	
49		ECRF/ERDB	07/25/16	01/06/17	120d	
50		ALI	07/25/16	01/06/17	120d	
51		BCF	07/25/16	01/06/17	120d	
52		MEVO	07/25/16	01/06/17	120d	
53		MSRP	07/25/16	01/06/17	120d	
54		PRF	07/25/16	01/06/17	120d	
55		LNG	07/25/16	01/06/17	120d	
56		eCats	07/25/16	01/06/17	120d	
57		Core IP network	07/25/16	01/06/17	120d	1
58		re-use current core	07/25/16	10/14/16	60d	
59		order new any new core IP components	07/25/16	01/06/17	120d	
60		establish POI for IP circuits to PSAPs	07/25/16	01/06/17	120d	
61		Core network monitoring	07/25/16	01/06/17	120d	
62		PSAP IP network	07/25/16	06/20/17	237d	1
63		primary PSAP link	07/25/16	05/09/17	207d	
64		backup PSAP link	07/25/16	05/09/17	207d	
65		tertiary PSAP link	07/25/16	05/09/17	207d	
66		redundant PSAP routers	07/25/16	05/09/17	207d	
67		MEVO	07/25/16	05/09/17	207d	
68		Text	07/25/16	06/20/17	237d	
69		Failover scenarios	07/25/16	06/20/17	237d	
70		Alternate call Routing	07/25/16	06/20/17	237d	
71		PSAP monitoring	07/25/16	06/20/17	237d	
72		eCats Data collecters	07/25/16	06/20/17	237d	
73		Training	05/10/17	06/20/17	30d	63
74		**Phase 3 PSAP ESi-Net Turn-up**	07/25/16	06/21/17	238d	1
75		establish direct connect to PSAP CPE	07/25/16	07/25/16	1d	
76		Cut PSAP 911 trunking to ESi-NET	07/26/16	07/26/16	1d	75

	At Risk	Task Name	Start Date	End Date	Duration	Predecessors
77		Turn up Text to 911 interface	07/26/16	07/26/16	1d	75
78		Turn up MEVO	07/26/16	07/26/16	1d	75
79		Test Alternate Call Routing	06/21/17	06/21/17	1d	46
80		Test IP Failover Scenarios	06/21/17	06/21/17	1d	46
81		Verify System Monitoring	06/21/17	06/21/17	1d	46
82		Project Completion	05/02/16	07/26/17	323d	

MEVO Training

MEVO - Features

MEVO - Features

Mute - caller can't hear you, but dispatcher can hear caller

How it works - Hit mute, LED indicator will blink, press mute again to retrieve caller.

Soft key mute button

Volume control functions

Volume Control
Handset - lift handset to increase volume

Ringer - use while handset is in cradle

Phone functions

Hold Key - puts the current caller on hold , press key again to retrieve the call on hold

Transfer Key - i.e. to call another extension

Conference Key - i.e. caller is put on hold press button and 5 digit extension. Three party conference

Hands Free - listen to playback

Redial Key - Redials the previously dialed number

Goodbye Key- Hang up/ main menu

Phone functions

Softkey answer the call button or pickup the handset

Further options soft key

Back Softkey return to previous

Softkey to scroll

Hold Softkey calling person hears music,
press hold again to retrieve caller

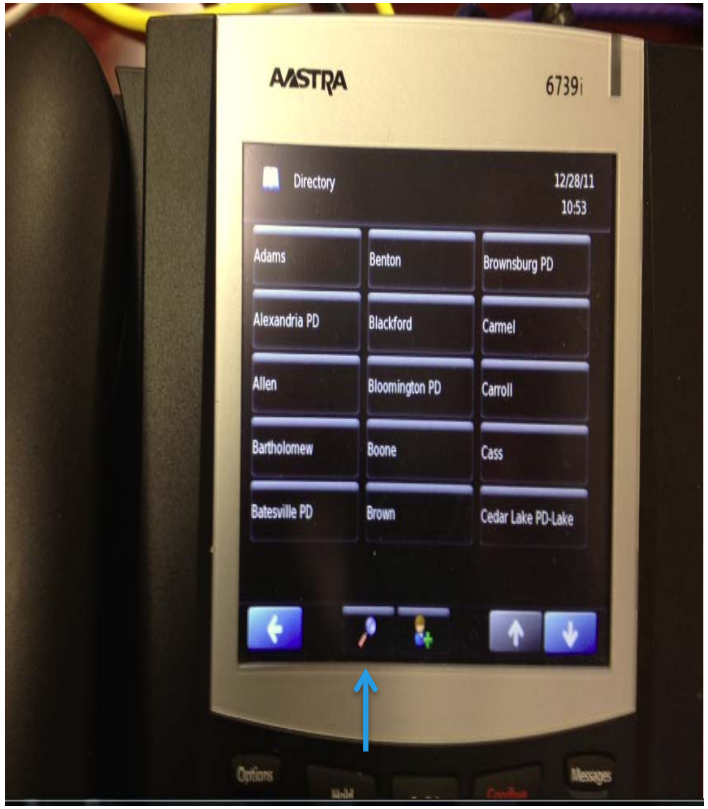
Transfer softkey or the transfer key 

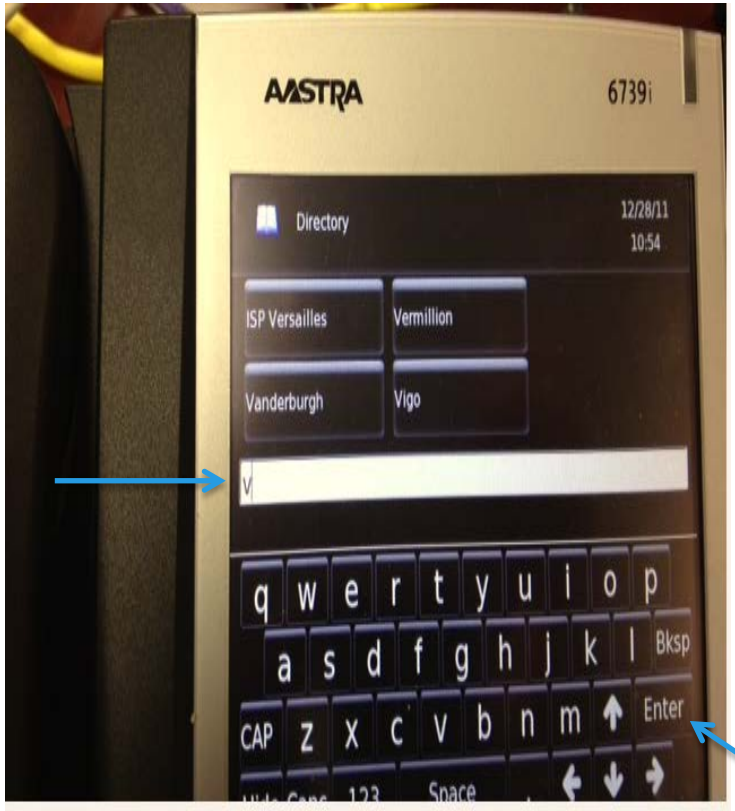
Global directory

Global directory button

Includes State PSAPs admin line numbers

Global directory





Magnify (search)
Brings up key board, type then hit enter

Phone functions – Answer call

Wireless call example

Wireless call example - Rebid

Rebid of wireless 9-1-1 call

Rebid – Wireless only

Non Service Initialized (NSI)

- 911-XXX-XXXX
- You cannot call these numbers back

What does this mean?

It means that these are wireless mobile devices that are not registered for service with any wireless carrier. These devices can ONLY make 911 calls and are incapable of receiving any incoming calls.

NSI call back not possible - example

red dot
not available

Callback available

green dot available

If someone hangs up, you can press the call back button without having to dial manually.

9-1-1 call transfer

9-1-1 call transfer

9-1-1 call transfer

Once you have opened the menu, press the PSAP button you want to transfer to.

9-1-1 call transfer form

Your 9-1-1 transfer buttons
Will be made up of the agencies
You have provided us from
The form in your packet.

2. 911 Transfer list table

a. Agency name

Enter the name of the agency the call is to be transferred/conferenced with. This name will be displayed on the button as seen on the phone as illustrated in section (4).

b. 911 Transfer number

Enter the 10-digit emergency services telephone number of the agency that rings directly into dispatch. It is crucial to provide a telephone number (TN) that rings directly into dispatch as an emergency or priority call.

Agency Name	Transfer Number (non auto attendant)

Local Resources

Local Resources

Local Resources

Once you have opened the menu, press the Local Resource button you want.

Local Resources

Your Local Resource buttons will be made up of the agencies you have provided us from the form in your packet.

3. Local Resource Table

The local resource table will contain data entered by local PSAP personnel that will populate 10 soft keys located on the left and right side of the phone display. Please fill out the the form below with the 10 most important local resources you agency would access to via a dialed telephone number. Entities such as; EMS, Hospitals, towing company, rail authority, etc. As seen in section (4) below.

a. **Resource Name**

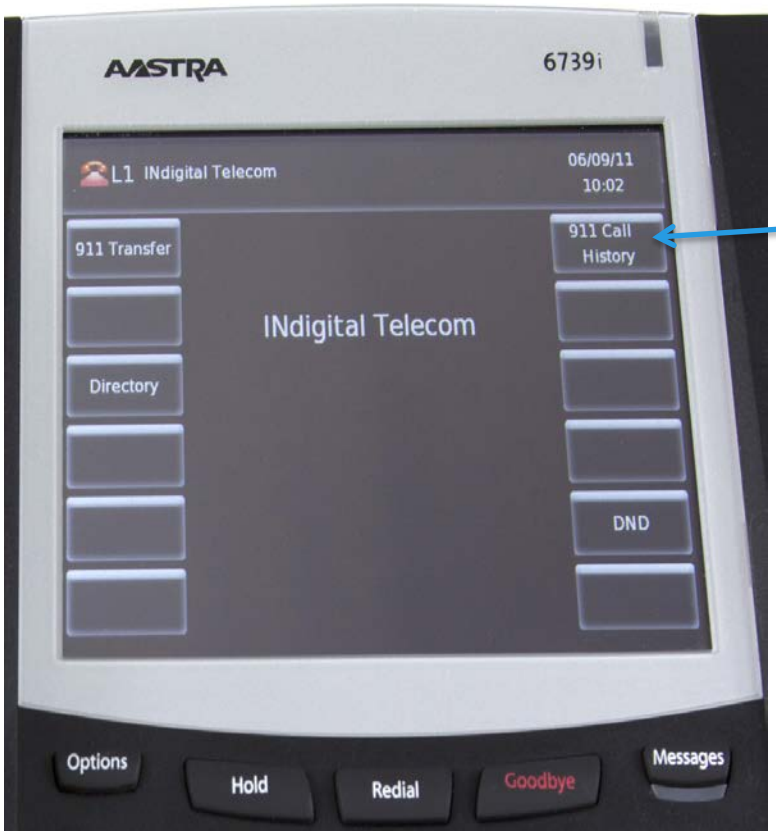
   Enter the name of the resource.

b. **Telephone number**

   Enter the 10-digit telephone number used to reach the resource.

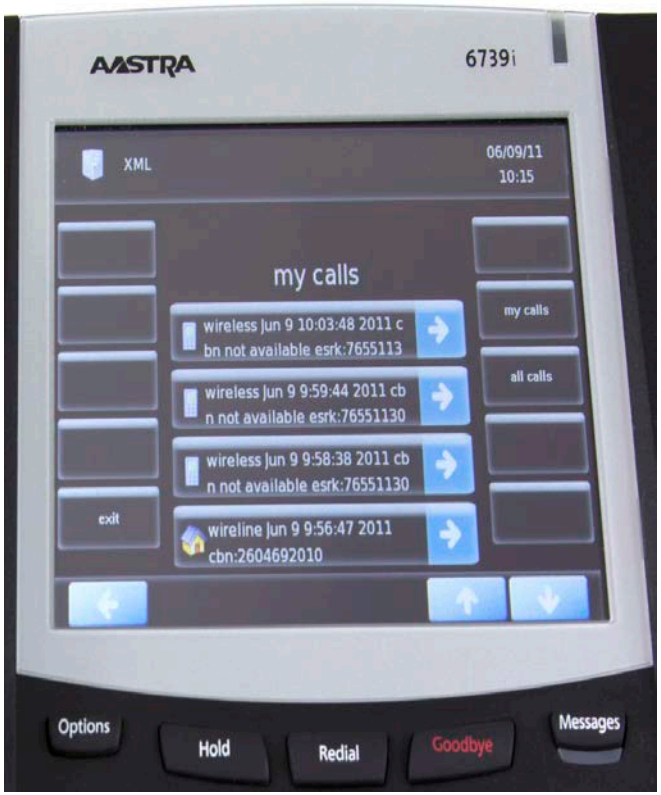
Resource Name	Telephone number

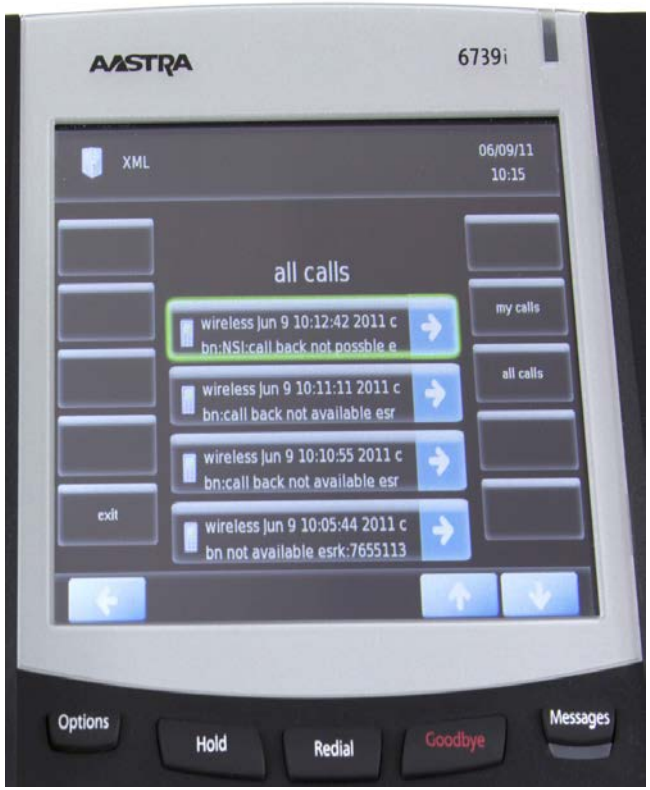
9-1-1 call history



9-1-1 call history soft key button

Call history – My call/All calls





To view the info select a call and press the blue button.

Network call recording

Once you pull a call from the call history you now have the option to listen to the playback.

Note - You must press the hands free button in order to hear recording. Recording will not play through handset.

Conference Call

Conference call

- Press conference button (hard or soft key)
- Dial extension or phone number
- Press (soft) dial button
- Places the original caller on HOLD
- Press conference again (highlighted Green)
- You are now joined in a conference call
- Press “leave” and the parties will be connected

Admin transfer call

Admin transfer call

- Press transfer button (hard or soft key)
- Dial extension/dial number
- Caller will be placed on HOLD
- Transfer button again this will release original party after transfer is complete

info@indigital.net | 877-469-2010 | www.indigital.net