

## **NG-911 Projects of VA**

- **Pittsylvania County – Intrado Network Solution and Intrado Viper CPE**
- **Franklin & Patrick Counties – Intrado Network Solution and Intrado Viper CPE**
- **New River Valley – Cassidian Patriot -Multi-jurisdiction geo-diverse CPE – Montgomery County, Town of Blacksburg and Town of Christiansburg.**
- **Southwest VA – Intrado Viper – Multi-node geo-diverse CPE- Dickenson County, Wise County, Lee County and City of Norton**
- **BTW- Cassidian Patriot-Multi-jurisdiction geo-diverse CPE- Twin County (Carroll County, Grayson County & City of Galax), Bland County, Wythe County Consolidated PSAP (Wythe County and Town of Wytheville)**
- **York County (To Be Completed)**

## NG-911 Pilots Lessons Learned Interviews Conducted by:

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### Governance/Project Oversight:

1. Did you have a project plan (documented) prior to applying for the NG 9-1-1 funds?
  - **Pittsylvania**
    - No I did not, other than a requirement of the state plan of how I wanted to do this. Buster mentioned about the original Henry, Patrick, and Franklin. Danville was invited but did not join Pittsylvania. Jim stated that he was not invited to project.
  - **Franklin/Patrick**
    - I don't think so, don't know for sure.
  - **New River**
    - Yes there was a CPE design with the geo-diverse. VITA approached this locality for a NG Pilot project for the shared CPE. We started talking about this as each PSAP was looking at their own CPE. This is when we got the conceptual design. The Viper was being done in SW and all the PSAPs here were using Plant CPE and the idea of a pilot project with the Plant/CML which is now Cassidian.
    - Some of the information is captured in the MOU with all the administrators for the 3 localities.
    - It is to be remembered that the Northrop Grumman network was to be utilized but that did not occur. (network project fell through)
  - **Southwest**
    - Fred- Mark Cvetnich of Dickenson County and Gene Vanover of Wise County were working on a CPE project as both had Orbacom equipment that was going out of service and at the time the larger the region the better and they reached out to Norton due to them receiving a notice that their Plant Mars equipment being at the end of life.
    - Gene Vanover – the equipment that was in place was at end of life, Fred- Norton was at end of Life. Steve B- Dickenson was at end of life.
    - Lee County came on board a year later when Steve, Dorothy, & Pokey approached them to be part of the SW project. Lee County had received a “get out of jail free card” basically their transformation into enhanced 9-1-1 would be paid for by the state.
  - **BTW**

- We had a milestone plan- The grant was with Bland and Twin, but once we had the agreement with the regional concept we agreed upon high level dates. As we went through the processes, we used milestones and timelines shifted so that we could have complete utilization of the grants for Bland, Twin, Wythe and Wytheville.
2. Were any changes made to the project plan during the implementation of the pilot –i.e. Did the intent and/or the end state of the pilot change somewhere along the line?
- **Pittsylvania**
    - I had envisioned that I would join our system to the state system being the statewide network. This being the Northrop Grumman network that was being discussed by the state.
  - **Franklin/Patrick**
    - Yes, it was originally was Franklin, Patrick and Martinsville-Henry. There was going to be a microwave ring for all and Henry County dropped out of the project. CenturyLink sweetened the pot for Martinsville-Henry County for the Cassidian project.
      - note( Martinsville-Henry has geo-diverse with one side at Martinsville-Henry and one at the Piedmont DCJS training academy.)
    - The original plan was for an IP route call delivery. The localities at the beginning were Franklin, Patrick, and Martinsville/Henry Counties. Once the project started it moved from IP route delivery to a complete CPE system between Franklin and Patrick Counties, Martinsville/Henry dropped out and installed their own system with another vendor.
  - **New River**
    - Yes – the big change was the statewide network. Then we had to come up with a regional network to connect the CPE.
  - **Southwest**
    - In the initial grant it was for a consolidated hosted solution. Team went to Richmond for Wireless Board meeting to plead their case. After that VITA approached the localities to be a pilot project with the Viper solution. (Viper had been selected by Dickenson County)
  - **BTW**
    - At a strategic level I don't think so. At the design level we did have some surprises. From the beginning we wanted a geo-diverse Patriot and as the design would have a single Ethernet connection but actually needed 2 for (QOS) Quality of Service.
3. Describe the local governance structure of pilot –e.g. Formal (New River), by-laws (Dickenson), or informal (Franklin/Patrick)?
- **Pittsylvania**
    - Informal as this was an individual approach.

- **Franklin/Patrick**
  - Informal with 2 MOU's
- **New River**
  - Initially it was very informal by reaching out to the PSAP managers, Chiefs etc... then in 2010 the authority was developed.
  - MOUs with the state and VITA and the 3 localities were in place prior.
- **Southwest**
  - Initially, did not have by-laws but later formed the By-Laws - It spelled out how many members appointments.
- **BTW**
  - By-laws. Right now we have not formerly adopted the by-laws but are working toward it. We do have a MOU that we are working under.

4. What were the determining factors that led the localities to want to participate in a NG9-1-1 pilot project?

- **Pittsylvania**
  - Reaching end of life on CPE, NexGen was a buzzword, talk within the state that there was grant dollars available. I reached out for the grant program in order to move forward.
- **Franklin/Patrick**
  - Bill Agee's vision and a joint partnership
  - Faced with an aging 9-1-1 infrastructure which currently supports its PSAPs, the counties of Franklin, Henry and Patrick and the City of Martinsville are faced with an overwhelming challenge to respond to new communication types and technologies. The high cost of operating an E-911 system is often a financial burden to local governments. This burden is exacerbated by deficit spending because wireline surcharge revenue is insufficient to support PSAP operations. In addition to a decrease in wireline surcharge revenue, the counties of Franklin, Henry and Patrick and the city of Martinsville are hampered by depressed economies and high unemployment. PSAP leaders within these localities recognize that the solution for them is the enhancement of their collective operational efficiencies. Their proposed solution is a new technology, one that blends voice, data, and other media types from a variety of sources to provide operational solutions that addresses identified needs.
- **New River**
  - All PSAPS had aging Plant Mars systems that needed replaced. (review the MOU for additional information) Christiansburg 2008 grant for \$150K, Blacksburg 2009 grant for 150K and Montgomery had a 2010 grant for \$108K – remaining \$42K was for their recorder to complete the \$150K.
  - VITA approached the PSAPs for a shared CPE.

- VA Tech was very supportive that the overall consolidation but was not involved with the CPE initially. VITA provided funding for a feasibility study for the consolidation.
- **Southwest**
  - Norton - Need for money and equipment,
  - Wise & Dickenson - equipment failures and need for equipment / funding.
- **BTW**
  - For Bland it was to have some redundancy. With Wythe it was an equipment replacement issue as well it was with Bland. Twin – we were approaching it from a regional perspective it improved our chances for funding and included disaster planning.
  - With the consolidation of Wythe and Wytheville a backup was needed with the elimination of Wytheville.
  - Twin- this is a springboard for us to look at a regional perspective and sharing of people resources.

5. How was procurement secured? (RFP, Sole Source, Cooperative Procurement, other)

- **Pittsylvania**
  - CPE was originally an RFP. For the NG 911The Viper was an upgrade as a sole source and the network was a sole source from the Intrado CPE.
- **Franklin/Patrick**
  - Sole Source for Call delivery and the Houston/Galveston Contract for the CPE
- **New River**
  - IFB
  - We have CenturyLink maintaining CPE and Verizon with the trunks.
- **Southwest**
  - Dickenson County put out an RFP and then did an upgrade, which led to using the Houston Galveston contract.
- **BTW**
  - RFP for both the CPE and a separate RFP for the Ethernet.
  - One of the lessons learned is to determine if you want to bundle the project or do you do separate procurement and installations for the CPE and Ethernet.

6. If you could do your NG 9-1-1 implementation again, what changes in governance or project oversight would you make?

- **Pittsylvania**

- I would not take it on! I would let the state take the lead. Need to have a statewide approach instead of individual. Others are using other solutions. This should fall under the state comprehensive plan for the implementation
- **Franklin/Patrick**
  - Right now I would not make any changes.
  - Have a sole source for the complete project
- **New River**
  - I think the governance was fine based upon our pilot project.
- **Southwest**
  - Qualifications for appointment for the members appointed to the standards committee. Used elected officials in order to get some of the localities on board.
  - Would be better to have the governance in place earlier – very clear governance structure, budget, similar to the regional jail authority.
  - Need to have someone as a budgeting manager and also technical manager to watch over installs and maintain.
- **BTW**
  - Initially there were some buy-in issues before could get the political side to sign off. This was a combination of the consolidation and the CPE as well. This complexity was that the consolidation was going on the same time.

7. Now that you are implemented, what is your plan for sustainability as you move forward?

- **Pittsylvania**
  - Funding is an issue. I am having to pay NG and legacy solutions. I have to pay Intrado and Verizon. Intrado is reimbursing Pittsylvania for the portion of Verizon. Still having to pay Verizon for the selective routers. The state took away the localities ability to obtain revenue via the implementation of the Telecommunications Taxation Reform.
- **Franklin/Patrick**
  - Hadn't thought about that one. There is still some software that can be installed for text to 9-1-1. We have added some servers.
- **New River**
  - What we are running into it is that when we move into the consolidation we will have to refresh the workstations. If there are localities that are using shared resources, then to have assistance available to support the localities.
- **Southwest**

- This is one of what the real cost of regional 9-1-1 is going to be. Is it really going to be truly cost effective? Not sure if it is going to be cost effective versus stand alone. Connectivity cost \$\$\$\$
- Consolidation, possibly public private partnerships,
- Without local officials showing up, they are not seeing the need for consolidation.

- **BTW**

- Getting the steering committee formed and each locality will have 2 representatives with Jolena Young being facilitator and David Suthers will be the IT consultant.

**OTHER:**

- **Pittsylvania**

- I realize that someone has to be the leader in a project. The locality had to move forward with the implementation.
- How many localities would be willing to do this? I (Jim) feel that several localities would like for the state to provide guidance. Pittsylvania County had to fight Intrado to get them to refund data charges to the county for their Verizon charges as we were led to believe that the Verizon charges would go away.

- **Franklin/Patrick**

- From my standpoint I would rather see more local people involved in the overall project so that they are familiar with the project. When we lost Bill we lost a lot of the information.

- **New River**

- My fear is that we may have so many islands created.

- **Southwest**

- **Fred -This project would not have been as effective if VITA had not stayed involved. Went through 4 different persons (RC's and staff)**
- **Gene- This project assisted Wise County to get a new PSAP facility which was desperately needed.**

- **BTW**

- **Jolena, one thing that I struggled with was that we expected that the CPE vendor come in and manage the project. We really didn't force them to manage the project. -**
- **Spent a lot of time with facilitating meetings with CenturyLink and Wireless etc...**

- **With ours they did not have a project management or engineering services of the CPE from Cassidian, but that would not have resolved the issue with not having a Project Manager.**

**Project Costs:**

**Interview Questions (8-13) to be provided to persons being interviewed prior to in-person meeting.**

8. From procurement to implementation of the project, what local resources were utilized?

A. Financial

- **Pittsylvania**
  - **Most was funded by the grant.**
- **Franklin/Patrick**
  - **The County did put in some funds but I am not sure how much. Franklin County was the fiscal agent for the Franklin/Patrick project.**
  - **New River**
  - **For CPE pilot project they (locality) paid for maintenance which was a 5yr. contract.**
- **Southwest**
  - **for the first years connectivity bore by the state for 9-1-1**
  - **(Each locality Infrastructure had to be upgraded). Initially the emergency implementation of the VIPER at Dickenson County. Even looked at Backup up at the data center in Duffield, due to connectivity cost was not feasible. We couldn't fully plan due to the Dickenson County needing the immediate CPE replacement. Norton stated at the time that they did not have the expertise and personnel**
  - **BTW**
  - **Used a combination of the Consolidation grant and the Bland / Twin grant. Twin / Bland each had a onetime ethernet cost of \$1,000.**

B. Personnel

- **Pittsylvania**
  - **Local personnel time for the project and procurement.**
- **Franklin/Patrick**
  - **100% funded project by grant- not sure on personnel how much time was involved.**
  - **New River**
  - **IT director at Montgomery County took the lead along with the PSAP managers, also had IT from other localities.**
  - **Southwest**
  - **Possibly overtime hours and meetings- Everyone experienced overtime, mileage to meetings,.**

- Buster- suggested at the very beginning that someone is keeping track of time and costs and group agreed this was a good idea.
    - Two of the 3 jurisdictions which had individuals that wear multiple hats. There is not a dedicated 9-1-1 coordinator. This leans to the complexity.
    - **BTW**  
Dave spent approximately 1060 hours for the consolidation building and CPE. The CPE took 1/3 of that time (~353 hrs) For Twin and Bland 2 people for a total at 96 hours each

9. What is your Total Cost of Ownership (TCO) of the NG 9-1-1 project?

- **Pittsylvania**
  - \$300,000
- **Franklin/Patrick**
  - \$597,000.00
- **New River**
  - Was originally looking at \$648,607 -
  - \$751K was from VITA
- **Southwest**
  - This is in the spreadsheet (and needs to add personnel cost if applicable) August of 2016 will be the end of the state funding.
    - Tim- suggested that now is the time to begin looking at the future options and planning.
- **BTW**
  - For the onetime cost. \$433,683.

10. What were your CPE, and CPE related, recurring costs prior to the implementation of the NG 9-1-1 pilot?

- **Pittsylvania**
  - Prior to \$3,100 for Verizon, \$1,200 for CenturyLink, \$700 Fairpoint Communications (CenturyLink rehomes to Intrado)
- **Franklin/Patrick**
  - CenturyLink approximately \$6,300 per month.
- **New River**
  - Everyone had maintenance for their Plant Mars through Verizon. Montgomery County \$11k per year. Blacksburg and Christiansburg would have been the same at \$11k per year each. Blacksburg had let their CPE maintenance lapse. All 3 were 3-seat PSAPs.
  - We did not have connectivity and which we do have now.
  - Currently we have T-1 Connectivity costs \$650 per month. This will go away when we consolidate.
- **Southwest**

- No warranty, no maintenance, was in place.
  - Trunks- review previous costs.
- **BTW**
  - This gets trickier. Bland maintenance had expired; Twin was \$20,000 for maintenance of the equipment. Wythe and Wytheville combined \$40,000 which includes –Interact total costs for CPE, CAD, Mapping. Wytheville Town - \$20,620 recurring cost prior to implementation- this is included in the above amount of \$40k.

11. What will be your recurring costs after implementation and grant funds are expended?

- **Pittsylvania**
  - \$7,401 for ALI Services and Network Management to Intrado. \$2,701 to Verizon. \$1,247.48 to CenturyLink. However, \$237.00 to Fairpoint Communications. Reimbursement \$2,551 from Intrado toward Verizon. County was under the impression that all were gone with the exception of Verizon.
- **Franklin/Patrick**
  - Intrado \$4,400 per month CenturyLink approximately \$1,700.
- **New River**
  - We will go back to paying our own CPE maintenance of approximately \$70,000 and will be having to pay connectivity fees of.
  - In the future we will be a 12-14 position PSAP. This will include VA Tech.
  - Possibly looking at Radford for a backup PSAP
- **Southwest**
  - That will be in year 6 -- CPE support to each locality based upon number of seats \$114,690.05.
  - T-1s for connectivity/redundancy splitting \$101,848.80 evenly
  - Governance document defines the expenses and with the exception of the T-1s is based on seats. This is recommended by the group for future and other localities.
- **BTW**
  - Wythe maintenance cost for 5 years for CPE is included. Year 6 will be when the locality will begin paying maintenance.
  - Bland had an increase of \$10k per year and Twin is sorting out the incremental costs and it is estimated to go up slightly.

12. What is the cost differential, if known, between a stand-alone vs. hosted solution approach?

- **Pittsylvania**

- \$14,000 per month for a hosted Great Migration. (this would not include the telco charges.) This is a stand alone.
- **Franklin/Patrick**
- **New River**
  - Would have to look at cost of a 3 position PSAP at \$240K each if individual jurisdiction for a total of \$720K.
  - Paid \$577,376 for 9 position geodiverse included the \$80,211 for 5 yrs. Prepaid maintenance.
- **Southwest**
  - Norton Positron gave pricing individually, versus the redundant viper. (Look at Jeff's spreadsheets.) Connectivity is the big thing. Originally Dickenson County had 5 positions. Group thought that this was overkill for the jurisdiction. May have been scoped as 5 positions due to that grant was paying for it.
- **BTW**
  - When we calculated it is almost nill and it is offset by the Ethernet connectivity.

13. Had you identified any other funding sources than VITA for the project? If yes, what were the sources?

- **Pittsylvania**
  - I was unable to locate any other funding sources.
- **Franklin/Patrick**
  - Not that I am aware of.
- **New River**
  - Just the local budget.
- |                |            |                           |
|----------------|------------|---------------------------|
| Current trunks | Blacksburg | 6 wireline and 6 wireless |
| Christiansburg |            | 4 wireline and 4 wireless |
| Montgomery     |            | 4 wireline and 4 wireless |
| VA Tech        |            | Has their own.            |

  - Proposed Consolidated trunks needed - Will be doing a trunk study to determine how many will be needed.
- **Southwest**
  - Local charities- really though, we could not identify any other sources for funding.
- **BTW**
  - Not for the CPE, but the consolidation Wythe used the Wythe/Bland Foundation in addition to the VITA and local funds.

## Operational and Technical Impacts:

14. What solution did you choose for CPE?

- **Pittsylvania**
  - Positron Viper (now Intrado Viper)
- **Franklin/Patrick**
  - Intrado Viper
- **New River**
  - Plant/CML Patriot
- **Southwest**
  - Intrado Viper- was purchased by Dickenson and then the other jurisdictions were forced to follow.
- **BTW**
  - Cassidian Patriot and one driver was that Twin had a patriot in place and was able to reuse some of the equipment.

15. Does your NG 9-1-1 project have redundancy? If so please explain your redundancy.

- **Pittsylvania**
  - Yes, redundant components within the Viper such as power supplies, cards etc...
- **Franklin/Patrick**
  - Yes, the center itself has redundant phone – The CPE Viper redundancy is Patrick County as they are our backup. We have UPS and Generator powersource. At the EOC we have 2 Viper positions and have 4 T-1 lines to the EOC from CenturyLink.
  - Yes, but we had to require a second circuit
- **New River**
  - Yes we have redundancy with the CPE with the connectivity. There are single points of failure such as same entry points. At Montgomery we have 2 fiber strands however they are on the same pole. We have wireless microwave connectivity.
- **Southwest**
  - Wise to Dickenson has T-1 and microwave. More redundancy for the two hosts versus the remotes. However stated that there is complete redundancy between all sites with the viper. As long as trunks are working.
  - All sites have UPS and generators.
  - Need to use a checklist to do testing.
- **BTW**

- Yes and no. The redundancy is because it is GeoDiverse in the Wythe and at Twin sites. We split our phone lines and redundant ALI modems at each site, Twin County has a command post and can be used as a single station.
- Is the Command Post tested? Yes it was tested once so far. The plan is that it will be testing once monthly.
- No- we do not have a redundant link between the Patriots which is a requirement of Cassidian. The Ethernet is not redundant.

16. What did you choose for connectivity of the CPE? (T-1, fiber, microwave)

- **Pittsylvania**
  - T-1
- **Franklin/Patrick**
  - IP between Patrick and Franklin. T-1 for the backup from CenturyLink to the EOC in the Public Safety Building.
- **New River**
  - Private owned fiber, 18 ghz microwave link and T-1
  - A lesson learned is that there is not staff for repairing the fiber and are at the mercy of a third party provider. Need to have persons trained or on contract for repairs and maintenance.
- **Southwest**
  - T-1 and microwave. Satellite sites via 2-T-1 only.
  - Connectivity via microwave would include multiple hops if used for the system to Lee County.
  - Tim's note- Scott County is looking at constructing a tower at the top of Powell Mountain that may potentially provide a location for one of the hops.
- **BTW**
  - fiber and one layer is a fiber ring however there is a 5 mile stretch to Bland in which the redundancy is running concurrently which is a problem.

17. If you have redundant connectivity for the CPE, please specify the type of connectivity? (T-1, fiber, microwave)

- **Pittsylvania**
  - 2 different T-1s and it is different providers. Intrado put two in place and they are ATT and Global Crossing
- **Franklin/Patrick**

- Connectivity via the IP. (may need to check with Intrado on how they are redundant)
  - CPE-Only in the Intrado cloud
- **New River**
  - All the above- T-1, Fiber & Microwave
- **Southwest**
  - T-1 & microwave
- **BTW**
  - Not at this time however We need funding for secondary connectivity due to the requirement by Cassidian.

18. Is your solution expandable to other jurisdictions? If yes, how can expanding to other jurisdictions be accomplished?

- **Pittsylvania**
  - Yes, CPE would take an upgrade to the system which would be to the switch and the jurisdiction could host another locality. The network would need to be upgraded.
- **Franklin/Patrick**
  - It is, but they need to have the 9-1-1 Intrado net.
- **New River**
  - They can be remotes but would have to have connectivity. Cassidian would have to be involved and the bandwidth requirements would have to provision. Additional cost for connectivity
- **Southwest**
  - Would have to have a remote of a viper. The connectivity costs may be too expensive.
  - Currently it is not a benefit as it is set up. Steve B thinks that the vipers set up in a singular location in separate buildings may be. Then it would be IP connectivity to the other positions. The main location could run the entire operation? Some with Intrado and at training have questioned the design and believe that the design is overthought.
  - At the above scenario is that a single point of failure. In the future will need to look at a possible way to minimize costs if at all possible.
- **BTW**
  - Another PSAP (probably small) could come on board and it would require some engineering on Cassidian.

19. How has this project improved call processing at the PSAP; such as functionality, connectivity, coordination etc...?

- **Pittsylvania**

- I saw an increase in my provisioned lines. Previously 6 Wireline 2 Wireless and 2 VOIP. Now I have 20 provisioned lines. Now able to receive more wireless calls.
- System stayed up during Derecho when other systems were going down. Pittsylvania County received Lynchburg, Franklin, Amherst etc... calls. Jim filed a complaint with Verizon but did not get a resolution of why this occurred.
- On a NG system you have ALI immediately. On a landline you will hear one ring while before it was 2 to 3 rings when you dialed 9-1-1. We did not notice any clarity change to voice. Functionality able to upgraded to text messaging.
- **Franklin/Patrick**
  - Functionality – compared to the old RescueStar we get more information that is provided. Before we had 8 wireline and 4 wireless. Now we are provisioned for 16 lines. More ability to transfer calls and preprogrammed numbers that we did not have before. Clarity on the line is by in large a little better.
  - Connectivity-it has improved with fewer dropped calls on the wireless side.
  - Coordination- it has improved with the project itself with Patrick.
  - We had an outage in March of 2011 that totally shut down the system. At the time Patrick had a higher version than Franklin. When the upgrade to the Viper was made at the Franklin site it shut down the system.
  - The major improvement was we went from a 95% ALI database with Century Link to 100% with Intrado. Was able to include wireless numbers that were associated to structures if needed.
- **New River**
  - They can now be a backup to each other now and they can log in to another jurisdiction that is on the system.
  - Command post is at all 3 sites and they are set up in a docking station with monitor for a 4<sup>th</sup> position. We had them at the Montgomery County for training and working over a wireless connection and they worked well.
  - Do you drill with the Command Posts? Yes and we are looking at doing a drill day.
- **Southwest**
  - Matt-CPE it did not change much other than keyboard than a hook.
  - Prior to implementation was connectivity to the demark, now we have to worry about IP, T-1s etc...
  - In theory we are wider connectivity that in theory we can answer. Norton has been setting dark without 9-1-1 calls coming through on too many occasions.

- Each locality can log in at other sites if needed.
- The time frame of almost 2 years of the implementation. We had multiple installers that complicated the project. This may be why we had and are having some of the issues.
- **BTW**
  - Probably improved, once they got the trunks straightened out. For Twin it was status quo.
  - Improvement for Twin is that we received site redundancy.
  - With clarity it was not much different.
  - Bland's shut down at midnight for 4 nights in a row. This was later resolved and was due to a major maintenance to the Ethernet with CenturyLink. The schedule for CenturyLink Maintenance is now communicated to the localities.
  - We are working together better now. It gives us leverage for funding as we are an established communication channel and also leverage with vendors as we are larger players. Bland appreciates any help that they can receive.
  - IT- a benefit was that it cleaned up IT networks, however currently with Twin there are 2 networks that will be cleaned up in mid August. Wythe has a closed network for CPE now which is securing the machines and eliminates cross contamination.
  - We now have an infrastructure in which we have a network design that we can move toward future growth such as unified CAD. A lot was done at Wythe that made it a more viable center.

#### OTHER

- **Pittsylvania**
  - Coordination- When jurisdiction signed the contracts with Intrado it was for the research and development which was \$100,000 for connectivity. They had to come in and put in another Viper to do the RFAI. For 6 months had 2 different Vipers 9-1-1 systems simultaneously running.
  - After conducting testing during the interview it was determined that calls could be transferred to Franklin County which was though that was not taking place.
- **Franklin/Patrick**

- (a higher level of backup as they (Intrado) provided a tape backup rather than newer technology.)
- (E-printer did not work and data was lost. So the lessons learned we needed to make sure that all is working properly before signoff.) Punchlist
- **New River**
- We ran into some issues with the design and when you get 3 or 4 vendors involved. One gap was not having a PSAP where the server was. With the configurations if the server at Montgomery goes down what happens. It is not at a PSAP and calls are going into it but not getting out to the remotes if connectivity to the remotes occurs.
- At a state level a checklist be created for these newer systems. You should go through every worst case scenario.
- Support from the vendor is a concern as they are not getting adequate training from the manufacture.
- **Southwest**
- Jeff- the satellite sites have different issues than the hosts. If Norton knows of a possible outage then they can utilized the Network Control Modem
- Fred- Need to be aware of the cost, our process is so new and is the technology up to par. Now there is so much complexity to the process that problem resolution is more difficult.
- Matt- Norton and Lee County it is additional cost for ALI to the overall system to plotting the mapping. Mapping system auto updating. – is not working properly. Took a step backwards but this may be because of the Spillman side
- Y connector sent by Spillman would not work and had to have Intrado reconfigure a port on the Viper.
- Steve- Need to have a concise picture of where you want to end up when you begin. Do not want to overthink the situation. Originally was a regional 9-1-1 center idea.
- (Matt- Interoperability needs to have data passing- not sure if where funding can come to. This is in regards to radio.)
- Need to look at where the calls are going to. Limited on personnel to handle the calls.
- Spillman and Gecomm connectivity is a current issue.
- **BTW**

**VITA Support:**

20. What problems occurred during your implementation and how could VITA assist other localities in avoiding them?

- **Pittsylvania**
  - Take the lead in the project. If VITA does not have funding to take the lead then it is difficult to lead. Pilot projects attempted to implement and then Pittsylvania went in on his own. State should not allow anyone to go out individually, but should have focused on the pilot.

- **Franklin/Patrick**
  - Vita could have been involved between the dispute between CenturyLink and Intrado with including the RC.
  - By not having Northrup Grumman in the beginning
- **New River**
  - Complexity and localities need guidance. Require an engineer from the vendor to set in on sales meeting prior to signing contract to insure that it will do what the salesman says it will do.
- **Southwest**
  - We have gotten good support from Vita. Could VITA supply or be a project manager in a situation such as this or a small PSAP? This could be a contracted out by VITA or a staff member would provide guidance in focusing scope that is available.
  - Consultants are sometime involved in an older solution versus new ideas and processes. They are reluctant to engage new ideas. This has been seen on the radio side especially.
  - Matt -Nice to have a project coordinator to help oversee the overall project.
  - We would have bullied much more if we did not have Pokey, Tim, Dorothy and Steve to assist.
  - Many additional positive comments regarding VITA-ISP were made during the interview.
- **BTW**
  - Vendor management via project management. We received guidance from VITA and we truly appreciate it. Jolena working as her role as Twin County Coordinator and agenda organizer.

21. What additional support could VITA –ISP have provided in your project implementation?

- **Pittsylvania**
  - It was so new I don't see how anybody could have provided additional support. Now VITA can provide support now that they could have done it before. If there is no state guidance then there is vendor guidance. Pittsylvania followed the comprehensive plan but as being the first it is costing the locality more than anticipated.
- **Franklin/Patrick**
  - Assist as being mediator resource.
- **New River**
  - Checklist and design review
- **Southwest**
  - Great support!
  - Bricks and mortar funding would have enticed the full consolidation and should be thought through in the future.

- A goal would be to be in a data center and /or have connectivity costs paid. We looked at the Duffield Data center extensively but the connectivity costs were too much also with it being in another LEC territory.
  - **BTW**
    - We got excellent support from VITA and recognize that this is leading edge technology.
22. Would this project have been possible without the funding from VITA?
- **Pittsylvania**
    - If I had no money I would not have done it, so no it would not have been possible.
  - **Franklin/Patrick**
    - I don't think it would. If we don't get the wireless funding it is tough to get anything local.
  - **New River**
    - No, grant gave them the push to do it.
  - **Southwest**
    - Fred-No and nor would be have looked at a regional project.
    - Matt-It has been real but has not been real fun.
    - Gene-Take pride in that we can and will work together to accomplish.
  - **BTW**
    - Absolutely not.

## **Other**

- **Pittsylvania**
  - More through field testing to be conducted on all Wireless Carriers within the jurisdiction as the testing was only done from the PSAP with multiple carriers when the cut to Intrado was completed.
  - Jim Davis stressed that he does not want the report to be a slam to VITA or the Grant program as it would not have been possible without them.
- **Franklin/Patrick**
  - How can we get to a statewide system if individual jurisdictions are doing their own thing?
  - When the Glade Spring tornado took place the technicians with CenturyLink did not have the training for the Intrado Viper. Still the CenturyLink does not

appear to have the personnel trained on the system and I am not sure how many technicians are trained.

- **New River**

- Lessons learned is to have handsets phones in case the system goes down.

- **Southwest**

- The SWVA Group has difficulty when there are changes to the Viper System that PSAPs are not notified.
- A discussion occurred within a year ago about the helpdesk not being aware of the system design that actions will affect other PSAPs. There is not a popup that illustrates the system design in order for the PSAPs to be aware of possible testing that needs to be completed.
- Intrado on the call on 6/28/13 could not advise who the local Intrado technician is. The technician is VAKY Communications
- Multinode as it is set up in the SW project has been having difficulty getting issues resolved and lots of times the helpdesk is not aware of the setup.

- **BTW**

- Network design was challenging as we did not go down to a level deep enough to understand that it needed 2 layers.
- CPE – the vendors know how to do it but the complexity of the project was challenging.
- Alternate routing- not sure if the phone companies understand in a multi jurisdictional CPE configuration. Concerns with CenturyLink and the domino effect that occurs when changes are made at one PSAP and it breaks something at another PSAP.
- VITS assisted with the issues with translations when making a cut. It took getting multiple CenturyLink persons on a call to resolve.
- Financial- we probably needed to have more financial review at multiple times. You are going to have a period for a double cost and you have to have someone to stay on top of it to insure that everyone is on the same sheet.
- Don't forget about the recorders -recording and plan for position level recording at the beginning.
- For Wythe we had so much more than just the CPE. We have seen the good and the bad of the vendors during the project. Communications with CenturyLink on deployment and when they would be on site was an issue. Utilization of VITA on calls was very beneficial.
- The reason we went with the vendor we went with were the health checks that are to be conducted by the vendor of the system and the cost will include upgrades, with the exception of hardware.

### Transfer of calls capable prior to NG.

- **Pittsylvania**
  - Danville and Lynchburg because they were in the tandem- but was going to the entire LATA.
- **Franklin/Patrick**
  - Martinsville-Henry & Patrick
- **New River**
  - All the same PSAPs as we could before. Prior to this project Montgomery County could transfer to Salem.
- **Southwest**
  - All the same PSAPs that we could before.
- **BTW**
  - All the same PSAPs that we could before.

### Transfer of calls capable after NG.

- **Pittsylvania**
  - I have the ability to transfer to Franklin and Patrick County because of the them being on the Intrado network however they are not getting the data. To Danville they only receive voice and not data.
  - Unable to transfer to Lynchburg, however with Danville it goes to their trunk.
  - Test calls conducted from Pittsylvania County to Franklin County to see if the data goes through. Telecommunicator advised that the call did show Phase !!.
- **Franklin/Patrick**
  - Patrick, Pittsylvania, Bedford, not sure about Floyd.
  - Did a test call from Franklin County to Patrick County and it worked successfully.
- **New River**
  - After the implementation Verizon would not allow to transfer to Salem. What are the policies with the different LECs?
- **Southwest**
  - All the same PSAPs that we could before.
- **BTW**
  - All the same PSAPs that we could before.

