Inter-Governmental Network (IGN) Meeting Notes

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**Summary of Next Steps**

1. Brian Ferris and Bill Schrier will draft a summary statement of next steps based on the meeting.
2. We agreed the IGN should be re-architected. No lead agency or person has been designed for this work, although all agencies present agreed they would participate. We agreed to further develop this concept via exchange of email documents. George Helton suggested a series of several “study sessions” of several hours each to determine a new architecture. The architecture would include:
   1. Requirements – what must the IGN support in order to maintain its usefulness for counties, cities and state agencies?
   2. Technical model – this will probably consist of several different components including use of the LGN (local government network), VPN (virtual private networking) over the Internet and perhaps other connections via UASI or locally-owned fiber or purchased Ethernet.
   3. Support model, to include who/how the new IGN will be supported by counties, county partnerships, CTS, other state agencies and outside partners such as NoaNet.
   4. Governance model. We agreed the current governance document is a good start and probably covers most of the basis.
   5. Funding model and rate methodology.
   6. Security model. This model is probably the “wild west”, i.e. an untrusted network requiring encryption and VPN to secure data transmitted.
3. CTS will look at its total cost of operating the network and break it down into circuit costs versus operational costs. This is important because, if the IGN is re-architected away from circuit-based network, many of the operational costs might still be present and need to be recovered.

**Meeting Notes**

1. The meeting was convened by Brian Ferris, IT Director, Thurston County, in the presentation room at 1500 Jefferson building at 10:30.
2. Attending:
   1. Counties and City: Gary Baker (Grant), Mark Curtis (Stevens), Brian Ferris (Thurston), Bud Harris and Ed Sherman (Kitsap), Mike Thurman (Pierce), George Helton (Yakima), Michael Sloon (City of Spokane)
   2. State Dept. of Health (DOH): Tracy Aldredge, Bruce Leitch
   3. DSHS: Kelly Schmitt, Charlie Johnson
   4. Secretary of State (SOS): Mark Neary, Mike Huntley
   5. Administrative Office of the Courts (AOC): Jim Peck
   6. State Office of the CIO: Bill Schrier, Scott Bream
   7. Washington State Patrol (WSP): Ku Back Ko, Mike Geiger, Eric Vonderscheer
   8. Consolidated Technology Services (CTS): Molly O’Donnell, Agnes Kirk, Debbie Kendall, Larry Lee, Mike Lilly, Rich O’Keeffe, Mark Stenland
3. Brian started by giving a short history of the IGN. It was originally established in the mid-1990s using grant funding, then, after the grant funding ran out, turned over to the Department of Information Services (DIS) to operate. The intent was to have a single network for cities and counties to access state applications. The IGN “grew up” before the Internet.
4. Brian emphasized the heavy dependence of counties on the IGN for access to applications from DOH, Courts, DSHS, SOS and WSP’s ACCESS. The network is used daily by counties.
5. Brian also stated that, at one time there was an IGN governance group. He passed around copies of the charter of that group, although it is not met in two years.
6. Brian sees two main problems with the IGN:
7. Architecture is old - an old model.
8. Rate model is outdated and has never been changed.
9. Brian introduced Molly O'Donnell of CTS - she has been with CTS for about six months managing CTS networks. Molly first talked about a legislatively-mandated network study:
10. See separate set of slides about the networking study which she distributed.
11. ESSD 5891 was a directive of the legislature to CTS to study of how state government networks are currently operated.
12. Report due to legislature Dec. 31st. CTS has a consultant on board doing the work and gathering data. The consultant is looking at redundancies, at provisioning and purchasing of circuits. Primary focus is the State Government Network (SGN). State agencies at the table were not generally aware of the study. DOH is aware of it but have not been involved yet.
13. There is no direct implication of this study to IGN at this time.
14. Molly O’Donnell next discussed the rate and funding models for the IGN:
15. See also two handouts about the IGN which she distributed - Background of the IGN and a table of IGN subscription options.
16. In the mid-1990s the IGN started as 39 T1 connections to County IT departments.
17. DIS inherited the network in 1998. Rates have not changed since then. Total loss for CTS in 2013 is $502,758. Total operating cost of the IGN is about $2.8 million per year.
18. Cost model – base cost in southern and eastern Washington it is $320 and in western Washington it is $220 plus add-ins.
19. At one point all the costs were paid by the state agency anchor tenants - WSP, DOH, DSHS, AOC and SOS (half-price $3800). Employment security probably should be. But when Stuart McKee was CIO he brought the counties in as an anchor tenant who also together pay a portion of the costs, to cover incidental “other traffic” like email etc. which, due to the routing design, used IGN network connectivity services, and DIS at that time wanted to recover costs for that addition traffic load.
20. Original concept was to take the total cost, divide it 39 ways and then for each county divide that equally between the anchor tenants. Some site based adjustments have been made, e.g. DSHS is only present in 36 counties. WSP and AOC are present in all 39 counties.

**Issues**

We identified the following issues with the present IGN situation:

1. No sustainable financial model.
   1. CTS loses $502k a year providing the IGN service
   2. The circuit cost is also expensive for using agencies. For example in Colville two T1 lines cost $2000 a month and Yakima County pays $2600 a month total.
2. Old Technology. “Circuits” are old technology.
3. Insufficient capacity. The present speed of the IGN will not be sufficient for carrying AOC’s new CMS application in five or six counties.
4. Enterprise-level connectivity. The IGN connections are not “enterprise” level connections – there are single points of failure but this is a mission-critical network for public safety services. And Counties do already have other “enterprise” level connections, e.g. dual redundant connections to the Internet.
5. Security. The IGN is basically “wild west” – an untrusted network from the State CISO’s and other stakeholders’ points of view.
6. Potential for increased costs. If counties leave the IGN (e.g. by having a single county host an IGN connection for several other counties), the operational costs will be split among fewer stakeholders and therefore the costs will go up for those remaining stakeholders.

**Potential Solutions**

*We brainstormed potential solutions to the issues:*

1. Develop and use the LGN.
   1. The local government network (LGN) is being developed by counties in eastern Washington for inter-county connectivity. It is largely based on fiber connections from NoaNet. It is a private, routed, layer 3 network costing the using counties $500 a month for 100 megabits per second and has a low 8 milliseconds of latency according to the now-finished proof of concept. It has multiple rings of fiber for redundancy, although there may be short tail circuits from the NoaNet demark to the county courthouse or administration building.
   2. The network is supported by NoaNet’s 24x7 network operations center. NoaNet is a non-profit consortium of the PUDs, many of which (e.g. Grant County) have their own fiber networks as well.
   3. The LGN can have multiple virtual “networks” or “ports”. For example one port might be an Internet connection for the County and a second, entirely separate port could be the secure LGN connection to other counties.
   4. NoaNet and the LGN are, for the most part, mostly available in Eastern Washington as much of the network was created through BTOP grants targeted at rural areas.
   5. As an IGN replacement, the LGN could be used in a couple of different configurations such as (1) CTS hooks directly into the LGN to deliver stakeholder services presently connected to the IGN; (2) The IGN connects to the LGN at a specific county, e.g. Yakima, and all the traffic from counties on the LGN flows across that connection.
2. Internet. Use VPN over existing Internet connections which counties already have in place. The AOC and WSP were both open to this solution – WSP’s ACCESS would use encryption anyway. Use of the Internet has the potential for performance issues because Internet delivery is “best effort”, i.e. there is no quality of service.
3. Fiber connection from another source. Such as fiber the county itself put in, or which was obtained via a UASI grant, I-Net, etc. This fiber would have to run from a County location to a CTS-maintained hub or point-of-presence.

*We also brainstormed some of the attributes which solutions must meet:*

1. DSHS is in 34 counties with its apps in Olympia and the need for HIPPA compliance. DSHS desires a consistent model for the IGN to support its applications and uses. DSHS also noted that it is converting many of its SGN circuits to its own offices in counties to Ethernet, which is sometimes half the cost of traditional telecommunications services.
2. We want to minimize the number of different models and “one off” components, e.g. circuits from different carriers like we have now.
3. Some solutions will require existing or contracted staffing support, e.g. implementing VPN.
4. Potential solutions will need a “support model”, e. g. who do you call when there are problems, who is responsible for upgrades/changes, who operates the solution, who/how are costs paid etc.

**Acronym Decoder**

* AOC = Administrative Office of the Courts
* BTOP = Broadband Technology Opportunities Program of the Federal Department of Commerce.
* CISO = Chief Information Security Officer
* CMS = Case Management System
* CTS = Consolidated Technology Services Department
* DOH = Department of Health
* DSHS = Department of Social and Health Services
* IGN = Intergovernmental Network
* SOS = Secretary of State
* UASI = Urban Area Security Initiative (federal grant program)
* VPN = Virtual Private Networking
* WSP = Washington State Patrol

**BACKGROUND**

Original IGN cost model:

* 39 T1 connections: one to each county IT department.
* Costs to Zone 3 locations (southern and eastern WA) most expensive due to State backbone costs to Vancouver, Yakima, and Spokane.
* All costs to a specific County site were divided 7-ways, with the County and each State Anchor Tenant paying 1/7 of the cost.

Modification #1 to IGN cost model:

* CTS began receiving IGN connection requests from individual cities and Tribes. These entities had elected, for a variety of reasons, to establish direct connections to the IGN, rather than connect through the County IGN connection.
* These customers pay 100% of the cost of their connection.

Modification #2 to the IGN cost model:

* Some requests for increased bandwidth to the original 39 connections were received.
* The requesting-organization paid 100% of the price increase associated with the additional bandwidth. (The other Anchor Tenant fees remained the same.)

Modification #3 to the IGN cost model:

* SOS removed from Anchor Tenant subscription

**CURRENT COST INFORMATION**

* CTS has not raised rates since approximately 1998
* Costs for increased bandwidth are passed on to the requester.
* Costs for increased vendor trunk charges, equipment replacement, etc. are not been passed on to Counties
* **2013 Cost Data**
* **Total Loss (year) $502,758**
* **Total Loss (monthly) $41,896**

Table of IGN subscription Options:

|  |  |
| --- | --- |
| **County** | **City/Tribe** |
|  |  |
| Base Charge ( $220 or $320 ) | Full Circuit Charge |
| Optional Internet Subscription | Optional Internet Subscription |
| Optional Bandwidth Upgrade | Optional Equipment Lease |

|  |  |
| --- | --- |
| Internet Access rates are based on customer's Full Time Equivalent (FTE) count | |
|  |  |
| Less than 20 FTEs | $5 per month per FTE |
| 20 -150 FTEs | $100 per month |
| 151 - 500 FTEs | $175 per month |
| 501 - 1,000 FTEs | $300 per month |
| More than 1,000 FTEs | $625 per month |