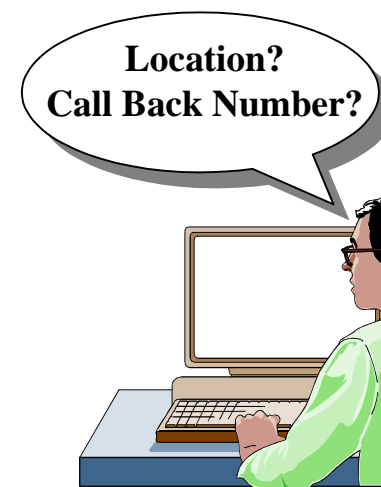
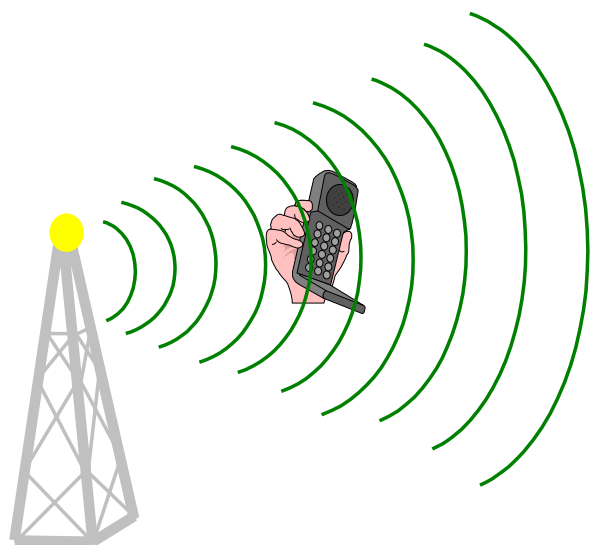


Meeting the Wireless E9-1-1 Challenge



Canadian Wireless E9-1-1 Working Group

February 19, 1999

Toronto, Ontario

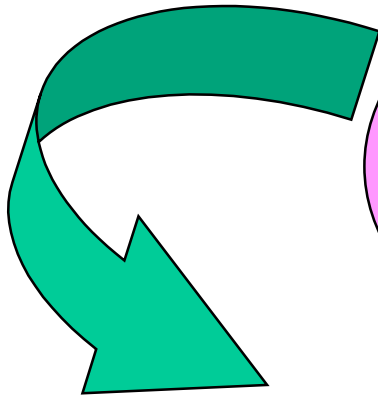
XYPOINT Corporation, Seattle WA

Today's Topics

- **Share insights gained from wireless E9-1-1 deployment in the United States**
- **Provide an overview of XYPOINT's wireless E9-1-1 service offering**
- **Look at its fit with Canadian E9-1-1 needs**
- **Answer questions**

About XYPOINT

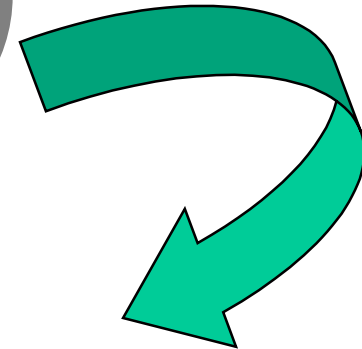
We are ...



XYPOINT

- Founded in 1993
- Based in Seattle
- 80 employees with strong wireless expertise

We are NOT...



- An application services company
- Premier wireless E9-1-1 provider
- Full service vendor, not just physical path
- MSC neutral
- LDT neutral
- Air interface neutral

- An LDT vendor

U.S. Phase I Mandate & Pre-requisites

Callback Number

Cell site and Sector

Starting 4/1/98

**WSP
must route 9-1-1 calls to
appropriate PSAP with CBN
& Location**

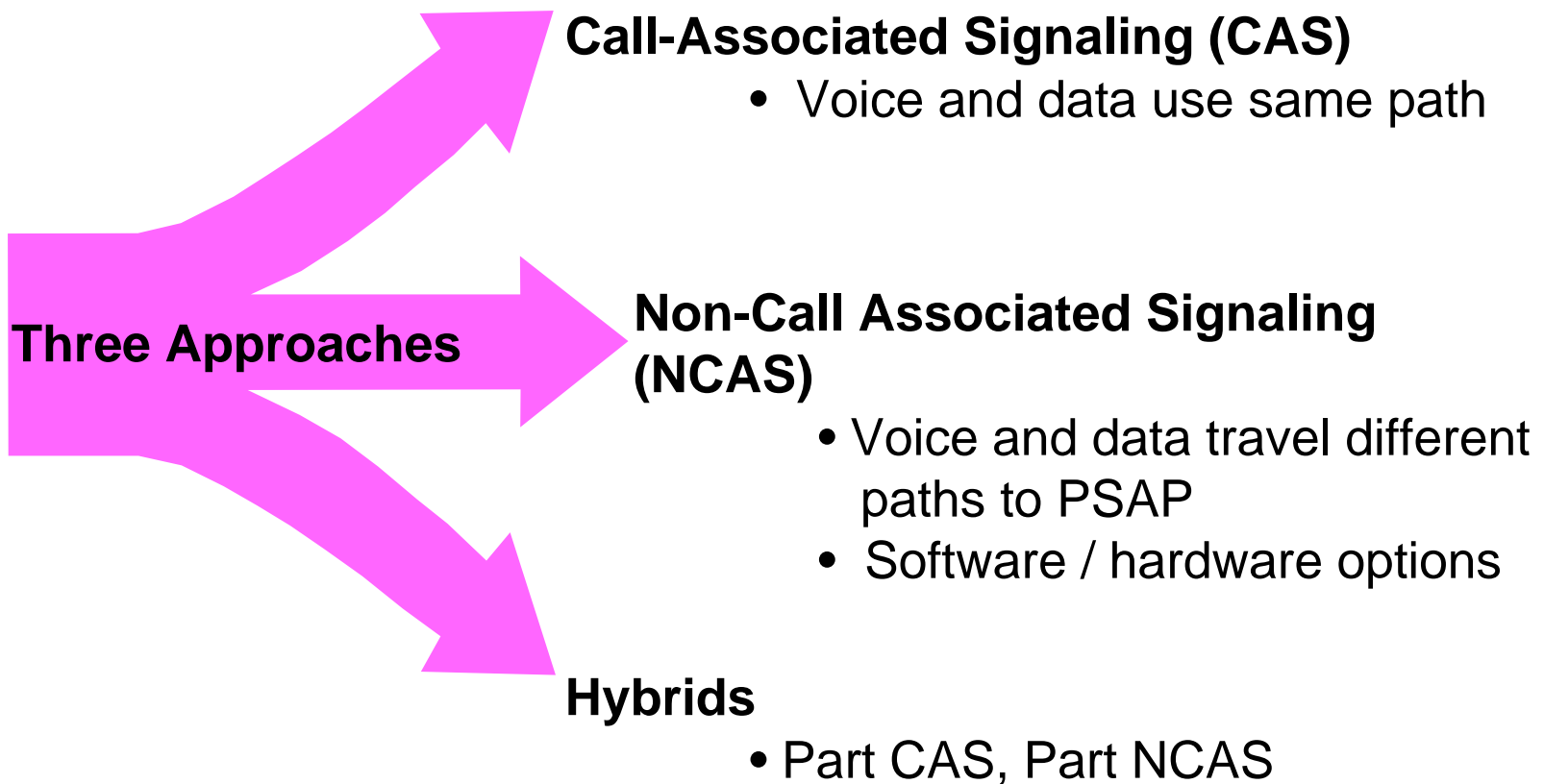
Within 6 months

Cost Recovery Available

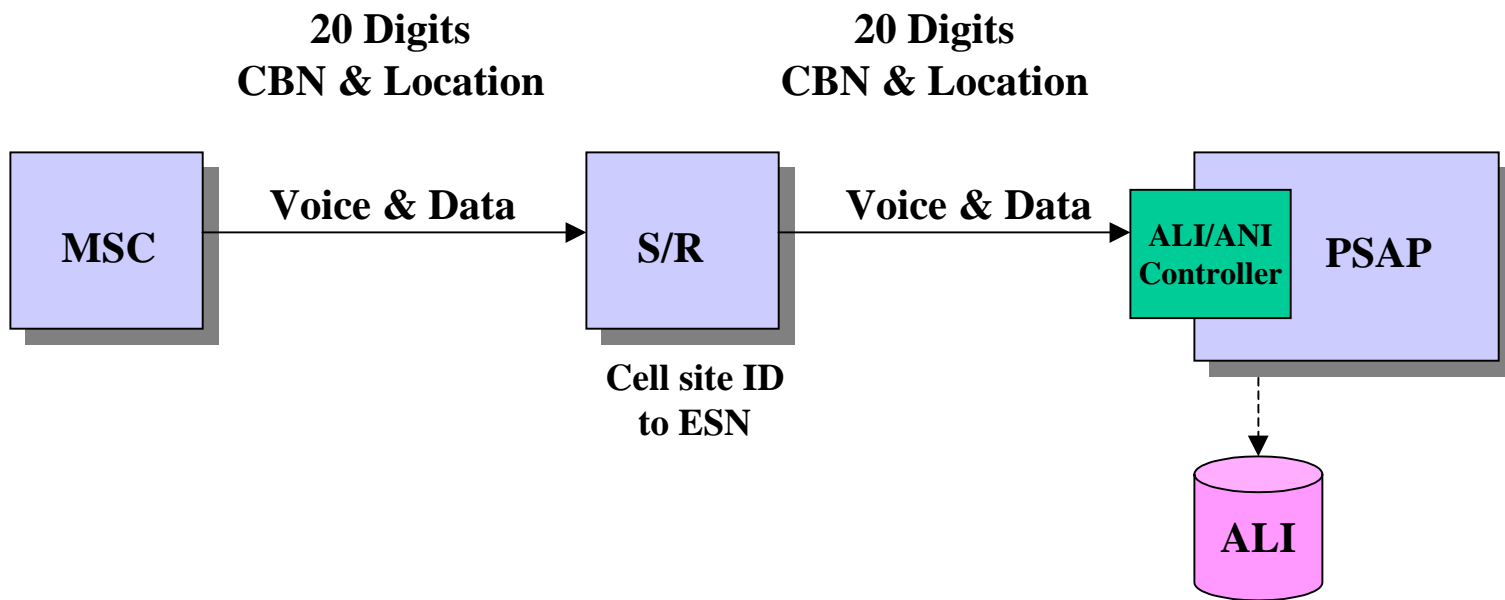
Valid PSAP Request



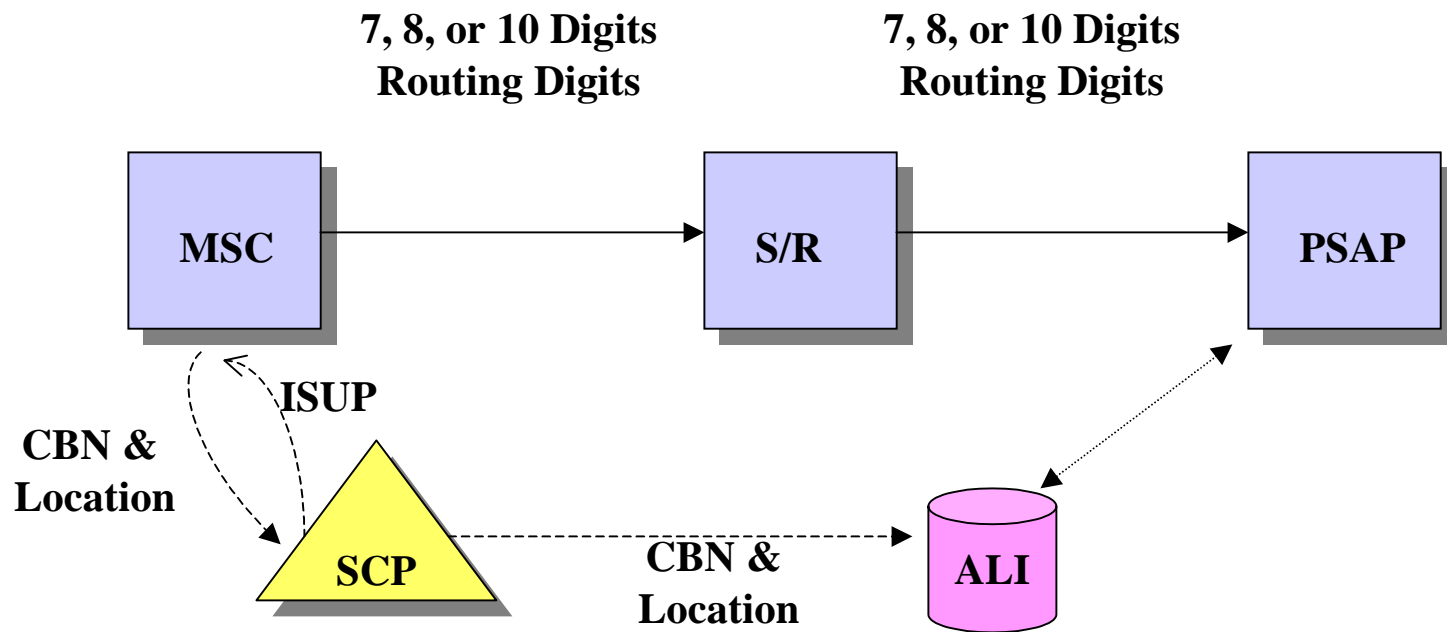
Technical Solutions



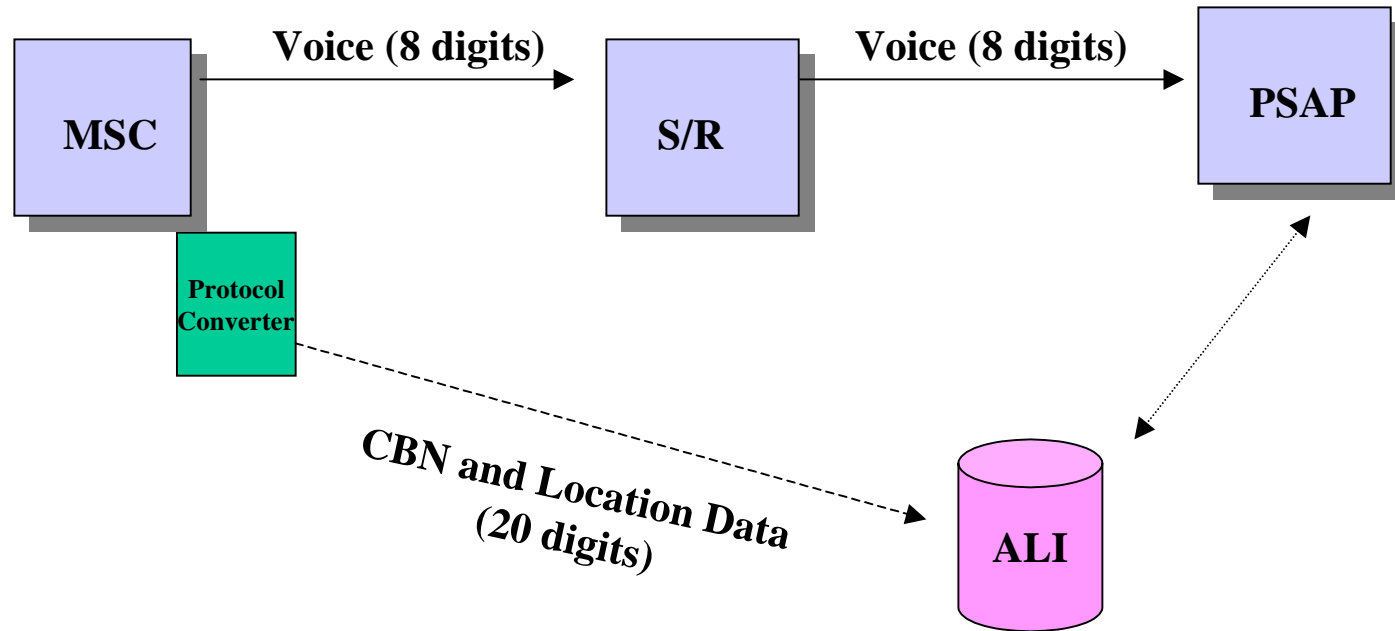
CAS



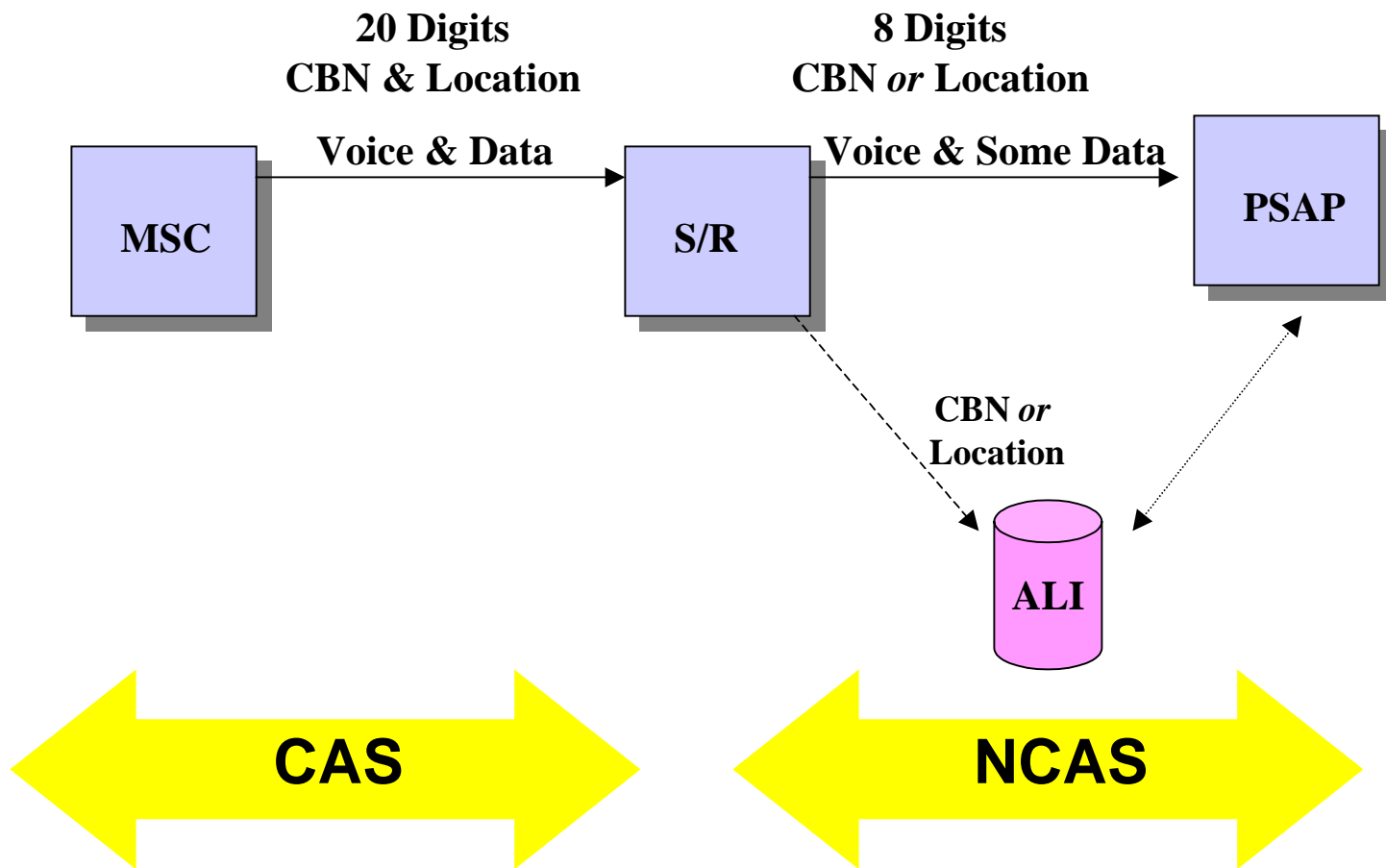
NCAS - Software Based



NCAS - Hardware Based



Hybrid Solution (CAS & NCAS)



Solutions Comparison

	CAS	NCAS	Hybrid
PROS	<ul style="list-style-type: none"> - Supports affiliated LEC as provider - Less immediate change for WSP 	<ul style="list-style-type: none"> - Available now without upgrades to SR/PSAP - Fast call setup - Provides significant reporting capabilities - Supports Phase II delivery capabilities 	<ul style="list-style-type: none"> - Available now without upgrades to SR/PSAP - Adequate call setup time
CONS	<ul style="list-style-type: none"> - Slow call setup unless upgrades made from SR to PSAP, 15 to 17 seconds - Does not support Phase II delivery capabilities 	<ul style="list-style-type: none"> - Data must be synchronized and maintained, usually involves third party - Uses numbering resources for ESRD 	<ul style="list-style-type: none"> - Additional costs for protocol converter - Equipment located at PSAP or LEC - Does not support Phase II delivery capabilities

Who's Using Which Technology?

CAS	NCAS	Hybrid
<ul style="list-style-type: none"> - Bell Atlantic Mobile 	<ul style="list-style-type: none"> - AirTouch - American Cellular - AT&T Wireless - BACTC - Cellular One - IN (BS) - Centennial - GTE Wireless - LA Cellular - PowerTel - PrimeCo - Price Comm - SBC - US Cellular - 360 in some markets 	<ul style="list-style-type: none"> - BellSouth Mobility - PBMS - Sprint - 360 in some markets

What's Been Implemented?

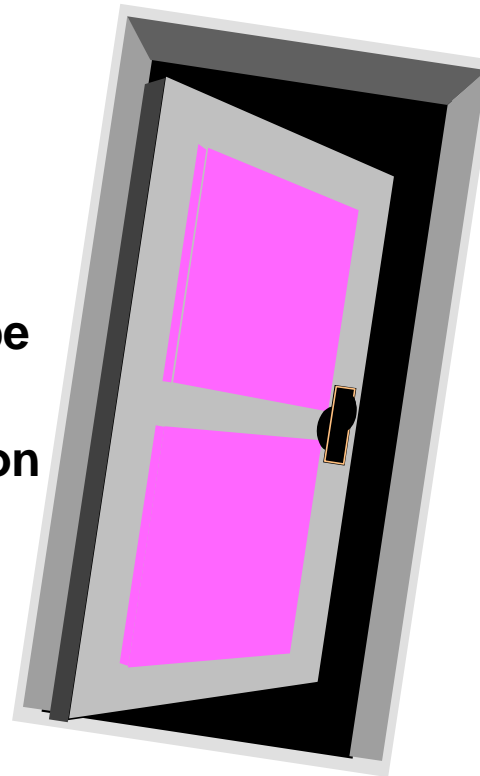
WSP	Locations	Provider	Status	Type
AirTouch	Los Angeles Co, CA King Co, WA	XYPOINT XYPOINT	Commercial Commercial	NCAS NCAS
AWS	Adams Co, Colorado Springs, Oregon, W. WA	SCC/SignalSoft SCC/SignalSoft	<i>Commercial</i> <i>Commercial</i>	NCAS NCAS
BAM	Newark, NJ	BellAtlantic LEC	Commercial	CAS
BellSouth	Lafayette, LA <i>(and maybe in MS)</i>	<i>CML SIR</i>	Trial	<i>Hybrid</i>
Cellular One	Hancock, Marion, Morgan, Shelby Cos IN	XYPOINT	Commercial	NCAS
Centennial	Allen, Elkhart, Steuben, St. Joseph Cos IN	XYPOINT	Commercial	NCAS
GTE Wireless	Hancock, Hendricks, Johnson, Marion, Morgan, Shelby Cos IN	XYPOINT	Commercial	NCAS
Powertel	Madison Co, AL	XYPOINT	Commercial	NCAS

Note: Italics above indicate additions made during discussions 2/19

Phase I

MYTHS

- Wireless E9-1-1 is a technical issue
- Mandate will drive players to meet 4/98 deadline
- CAS using FGD will be standard
- LECs will cooperate on WSP solutions
- States will move quickly on cost recovery
- WSPs will see high demand



REALITY

- Its political and financial!
- No clarity til 12/97, no penalties
- NCAS is leading, standards slow to develop
- Some LECs have refused to open networks
- Legislation has been very slow
- PSAPs confused about their role

Lessons Learned in U.S.

- **Phase I Wireless E9-1-1 has happened where**
 - ➔ Adequate levels of cost recovery
 - ➔ Mechanisms for reimbursement in place
 - ➔ Supportive state 9-1-1 leadership
 - ➔ Strong public safety push for deployment
 - APCO/NENA/PSAPs organized
 - ➔ NCAS technology chosen
- **Roll-out slower than expected - less than 5% of PSAPs**
- **CAS vs NCAS was seen as a Phase I implementation issue - now is important for enabling Phase II**

Phase II

MYTHS

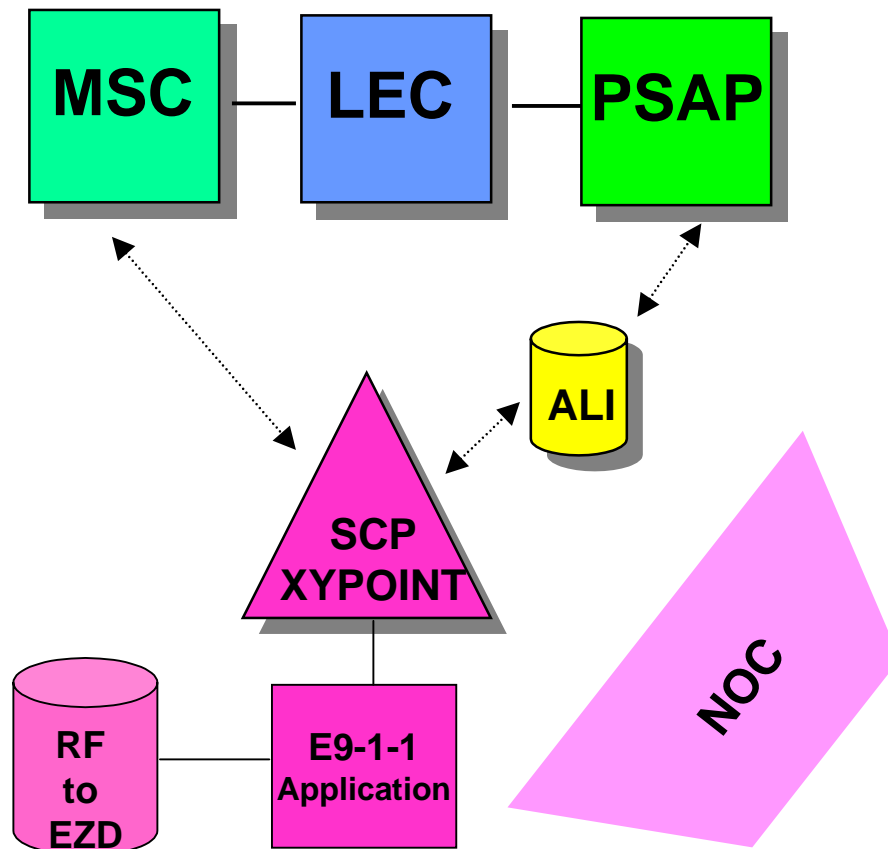
- With a mandate, every WSP will deploy by the 2001 deadline
- Public safety will pay for the up-front capital cost and ongoing operation
- WSPs will use LDT to offer new enhanced services - getting a “free ride” to new profits

REALITY

- Seamless integration using existing networks and fallback is mandatory
 - Ability to use cell site and sector if X,Y system fails
- PSAPs not be able to pay cost of all WSPs deploying in all market - *the money comes from wireless customers!*
- WSPs don't see strategic advantage when mandate applies to all
 - Still looking for killer application

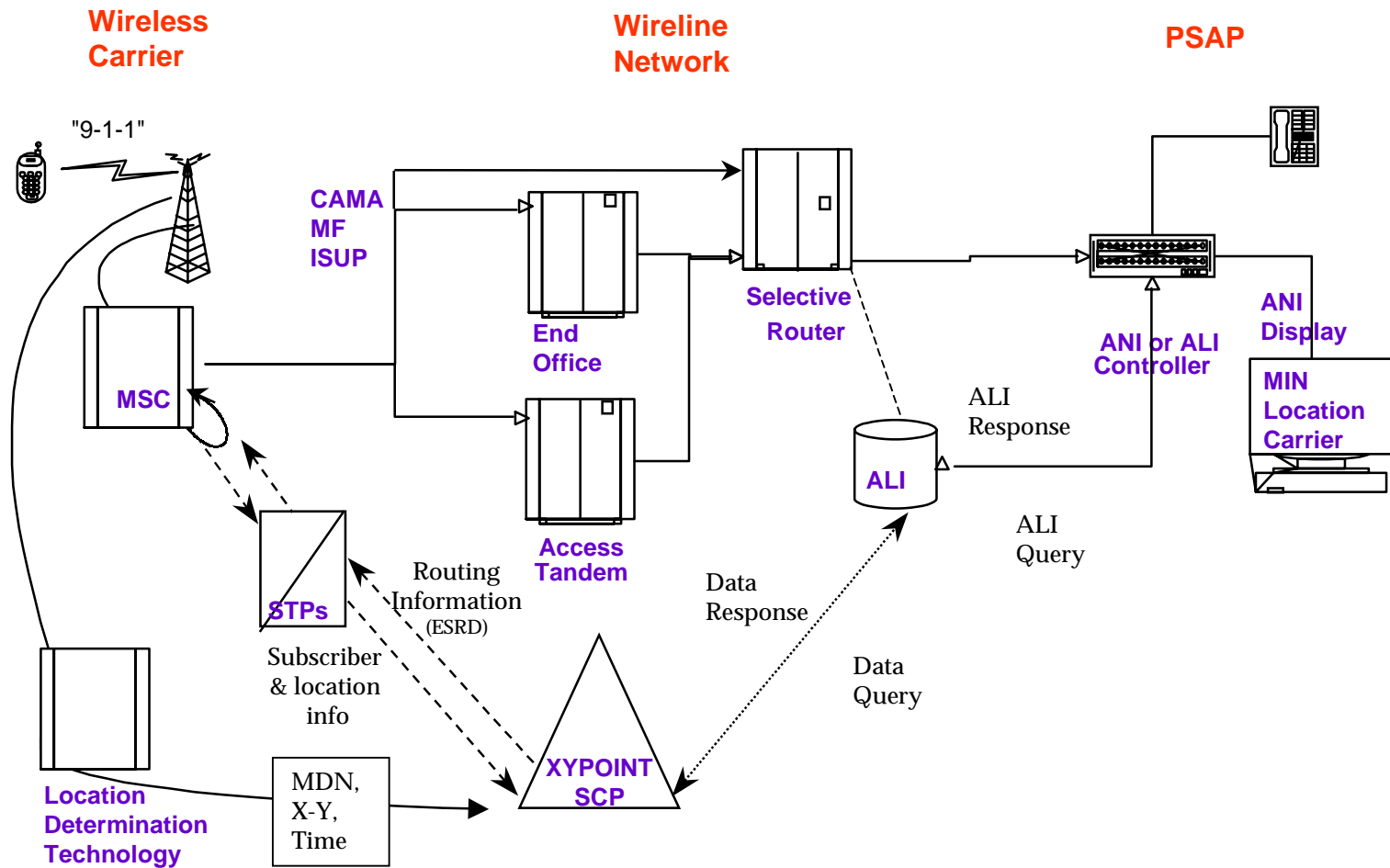


Our Technical Solution

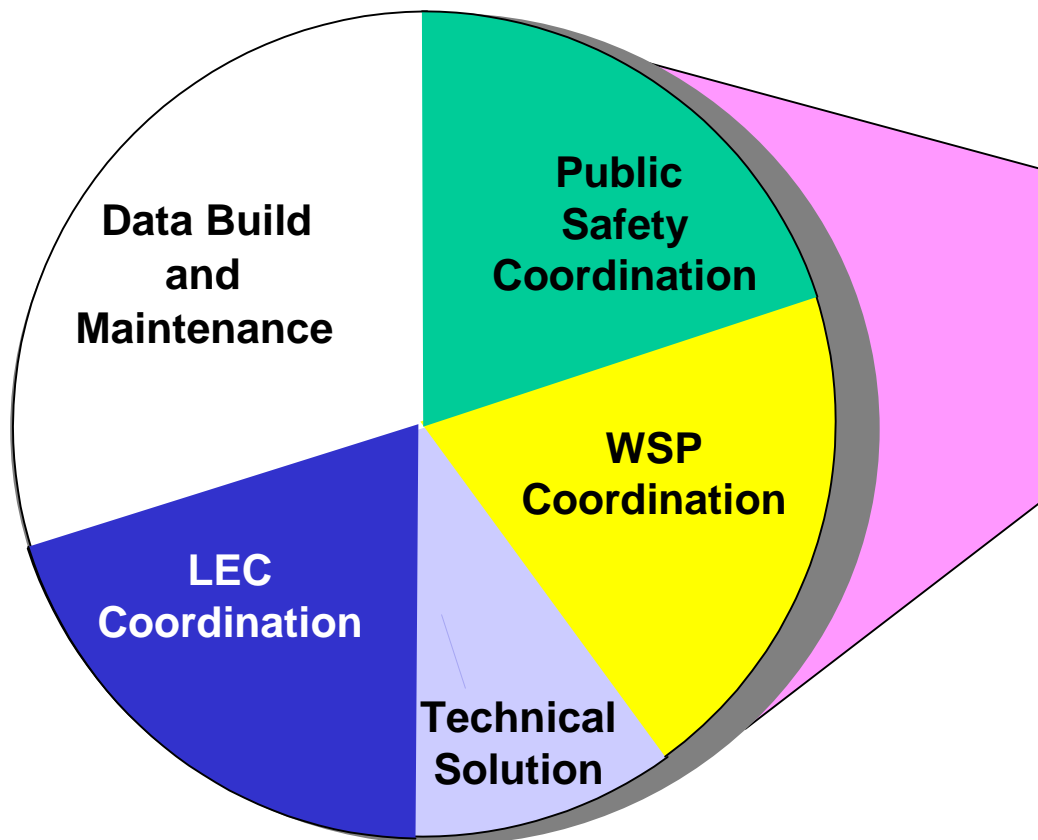


- Software based NCAS
- Fully redundant network
- Geographically diverse platforms
- Interfaces with MSC using standard SS7
- Choice of interfaces with ALI database

Integrates with Existing Networks and Supports Phase II



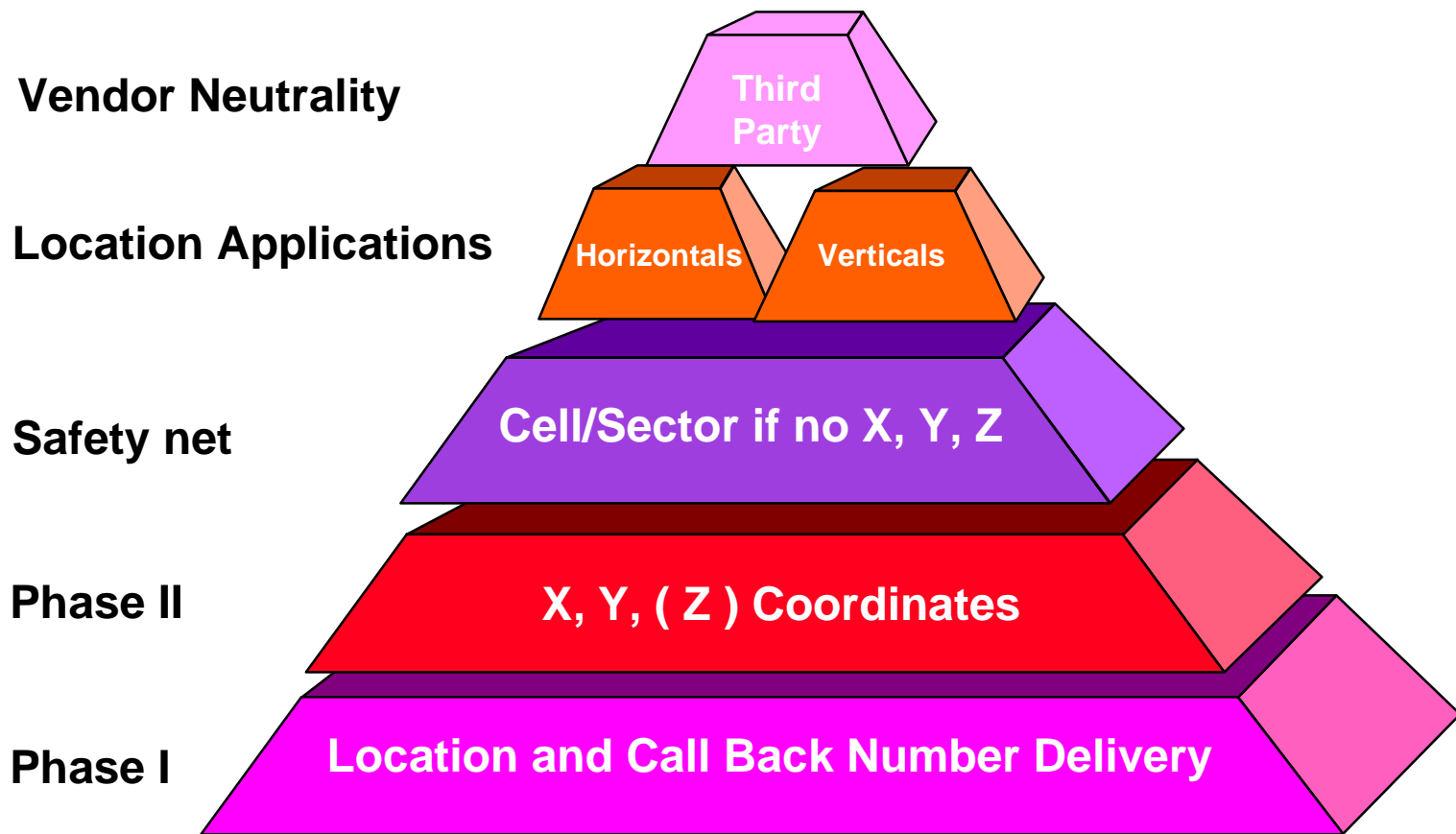
E9-1-1 Is Not Just A Technical Solution



Typically, XYPOINT Provides

- Planning
- Interconnection
- ALI interface
- Database creation
- ESRD coordination
- PSAP displays
- SS7/MSC integration
- Testing & acceptance
- On-going operations
- Compliance tracking
- Deployment management
- Legislative services

Solution Provides Easy Migration



What's It Take To Make It Work?

Need

- Interface to ALI
- MSC with SS7 ISUP and tandem trunk capable
- Route sets to XYPOINT

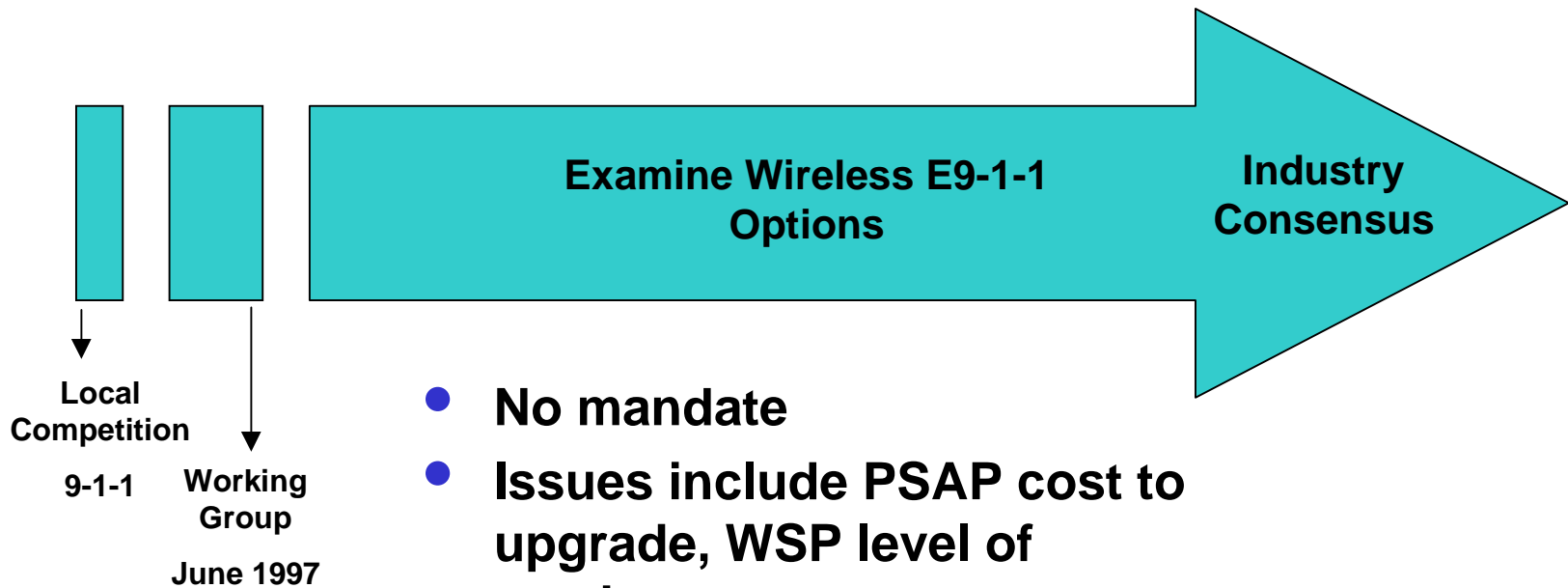
Do NOT Need

- PSAP equipment upgrades
- Protocol converters
- MSC triggers
- Trunks to XYPOINT

Data Build

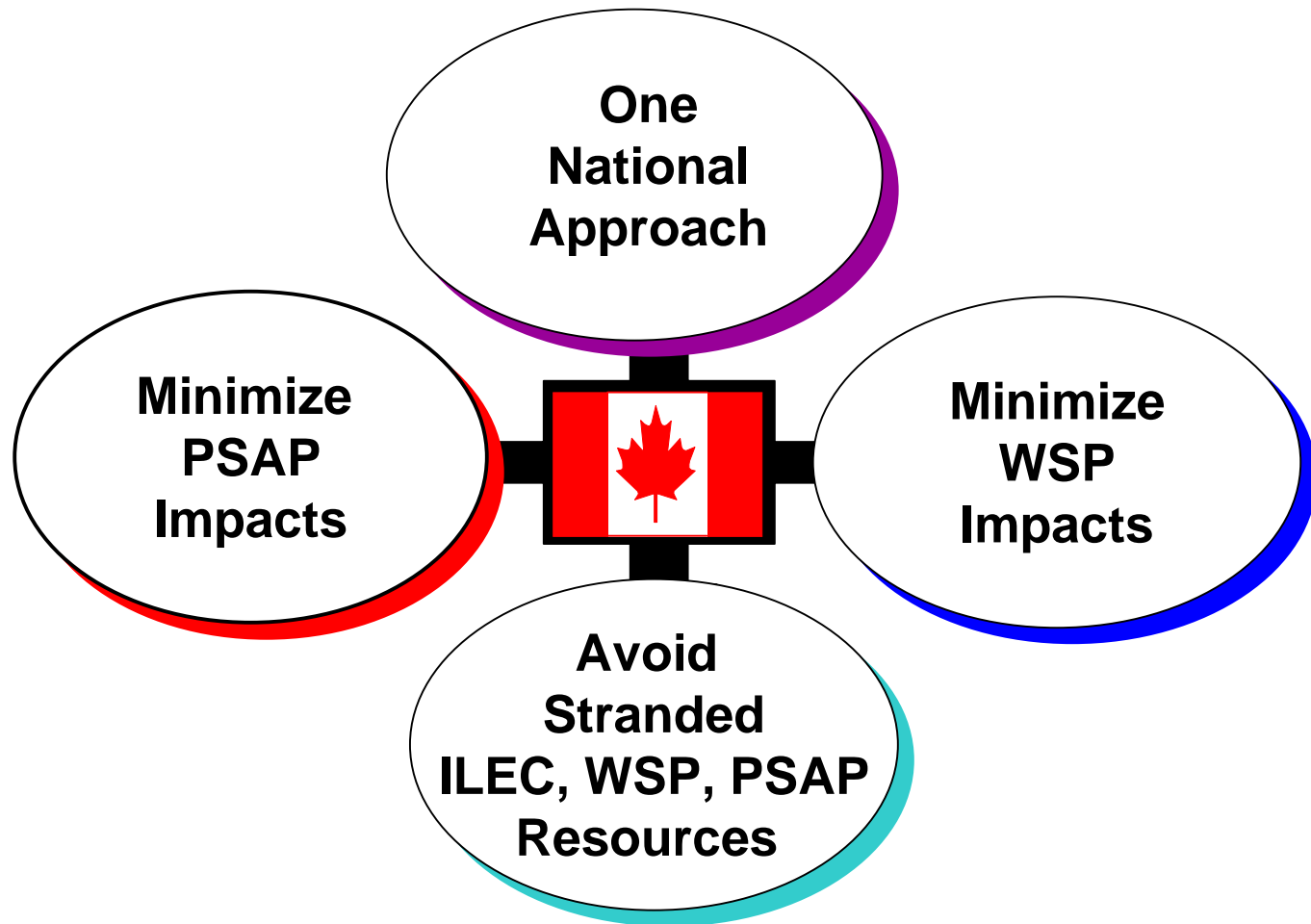
- RF coverage
- PSAP boundaries
- Emergency Services Zones
- pANI/ESRD assignments

Canada's Wireless E9-1-1 Status



- No mandate
- Issues include PSAP cost to upgrade, WSP level of service, cost recovery, phase II, MSC features, etc.
- Trials in progress
- Not yet addressing software-based NCAS options

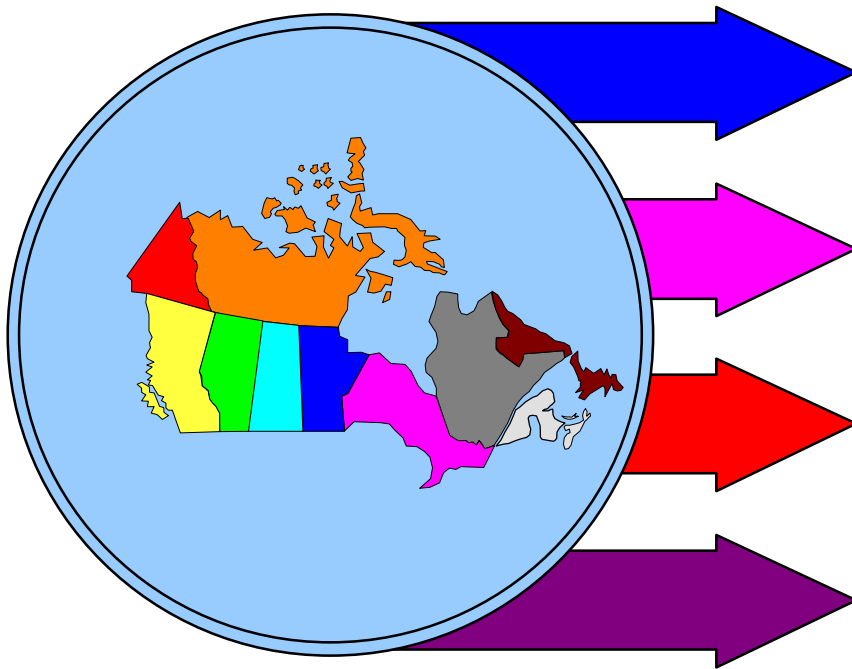
Canadian Wireless E9-1-1 Needs



Our Solution Provides Flexibility

Issue	Options			
Business Model	Service Bureau	Industry Consortia	WSP(s) Operates	ILEC(s) Resell
Coverage	Market - 1 WSP - All WSPs	Provincial	Regional	National
Implementation Approach	Full Support	Roll-out Only	Proj Mgmt Only	
ALI Interface	Pull	Push		
Migration	Phase I Only	Phase I & II Any LDT	Fallback II to I	Applications

What Do We Bring to Canada?



- **Experience as largest wireless E9-1-1 service provider in US**
 - 5 WSPs working
 - 21 Markets commercial
 - 41 PSAPs in service
 - 260 Markets in process
- **Carrier class platform, support and reliability**
- **Working with LDT vendors on Phase II**
- **New location services in development**

Our Proposal

- **Come and kick our tires**
 - See facilities
 - Meet team
 - Visit PSAP with commercial service
- **Detailed technical workshop in Canada**
- **Jointly define the Canadian model**
- **Try our software-based NCAS solution in trial**

There is a REAL solution available now!