

Wireless 9-1-1 Overview

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9-1-1 Product Management

Qwest



Wireless Fact Sheet

- **100 Million Wireless Subscribers In USA Today**
- **50,000 New Subscribers Added Daily**
- **150 Million Calls to 9-1-1 in 2000**
- **45 Million or 30% From Wireless Phones**
- **100,000 Wireless 9-1-1 calls a day**
- **More than 1 9-1-1 call per second**
- **65% of Subscribers Purchase For Safety**

Wireless 9-1-1 Terminology

- **ESRD**
 - Emergency Services Routing Digits (pANI)
 - Identifies originating cell site/sector
- **ESRK**
 - Emergency Services Routing Key (pANI)
 - Identifies destination ESZ or PSAP
- **CPN**
 - Calling Party's Number
 - Callback number
 - May be MIN/MDN/Both or Neither

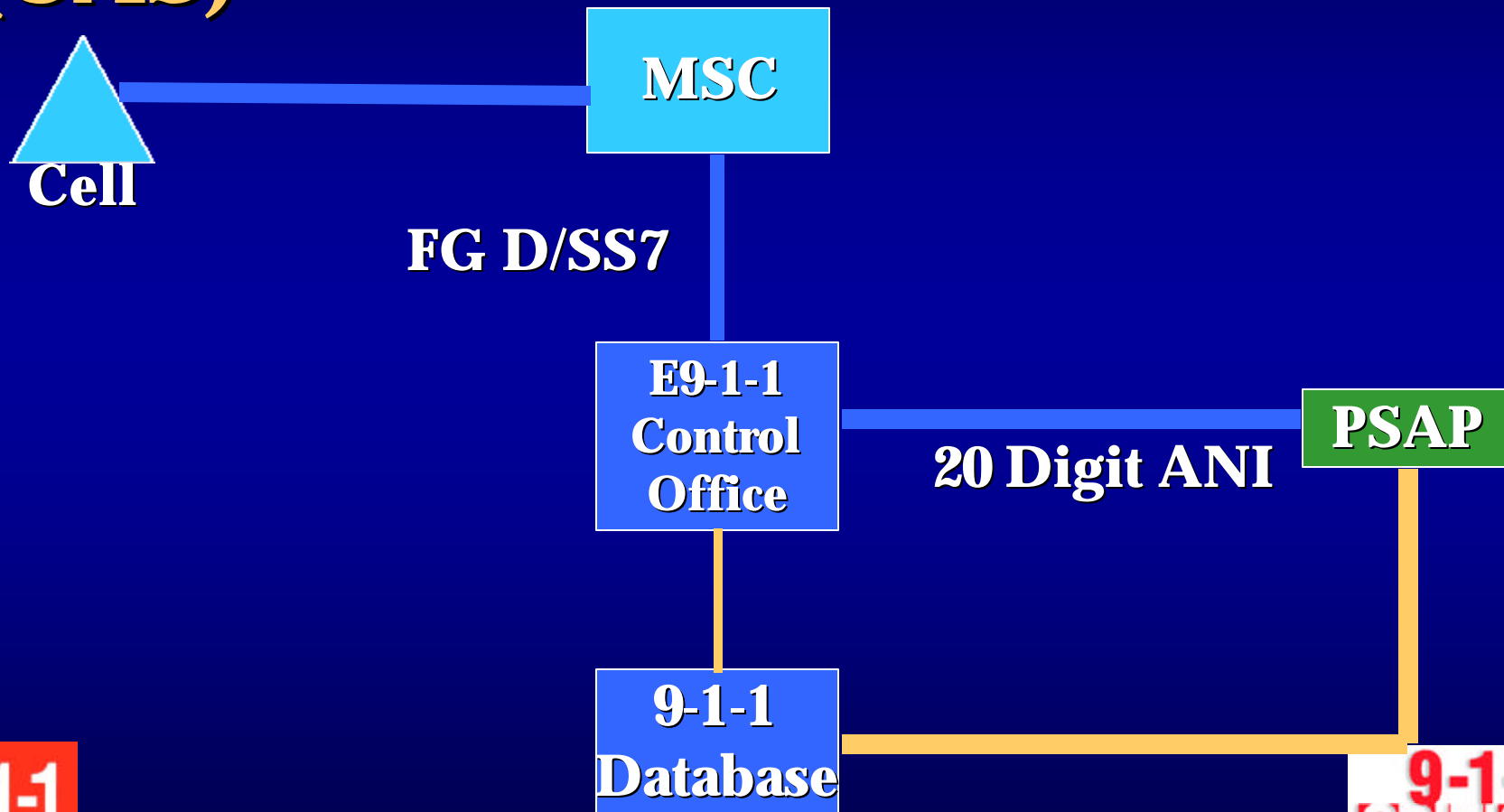
Wireless 9-1-1 Terminology

- **MSC**
 - Mobile Switching Center
 - Wireless equivalent of Central Office
- **SCP**
 - Service Control Point
 - Computer that directs call routing
- **ALI Steering**
 - Query of remote databases by local 9-1-1 database.

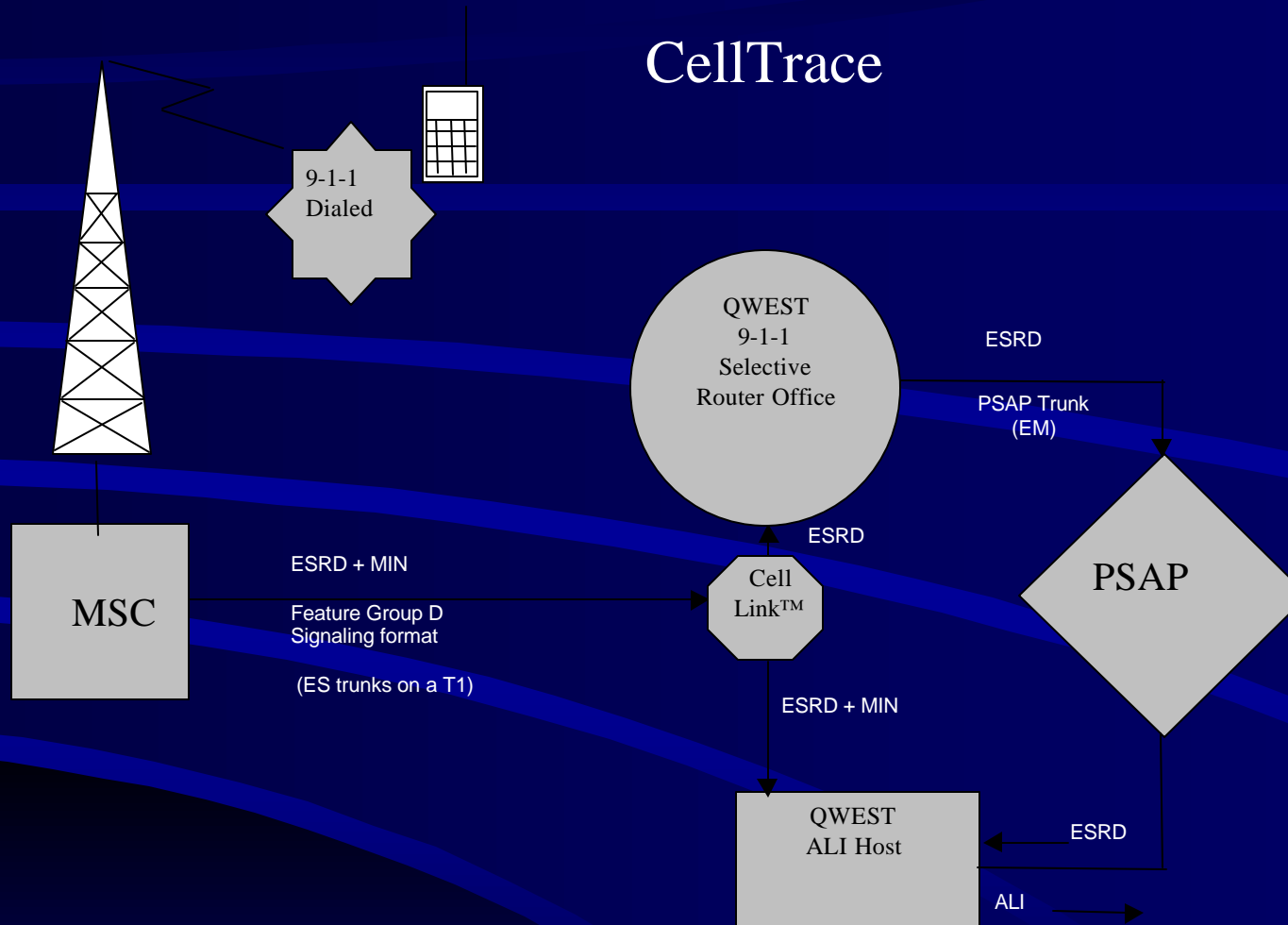
Wireless 9-1-1 Terminology

- **CAS**
 - Call path Associated Signaling
 - Callback number delivered with the voice call
 - Requires upgrade to E9-1-1 Control Office and PSAP CPE
- **NCAS**
 - Non Call path Associated Signaling
 - Callback number delivered via ALI
 - Upgrade required to ALI database system
 - Requires remote SCP/database operation

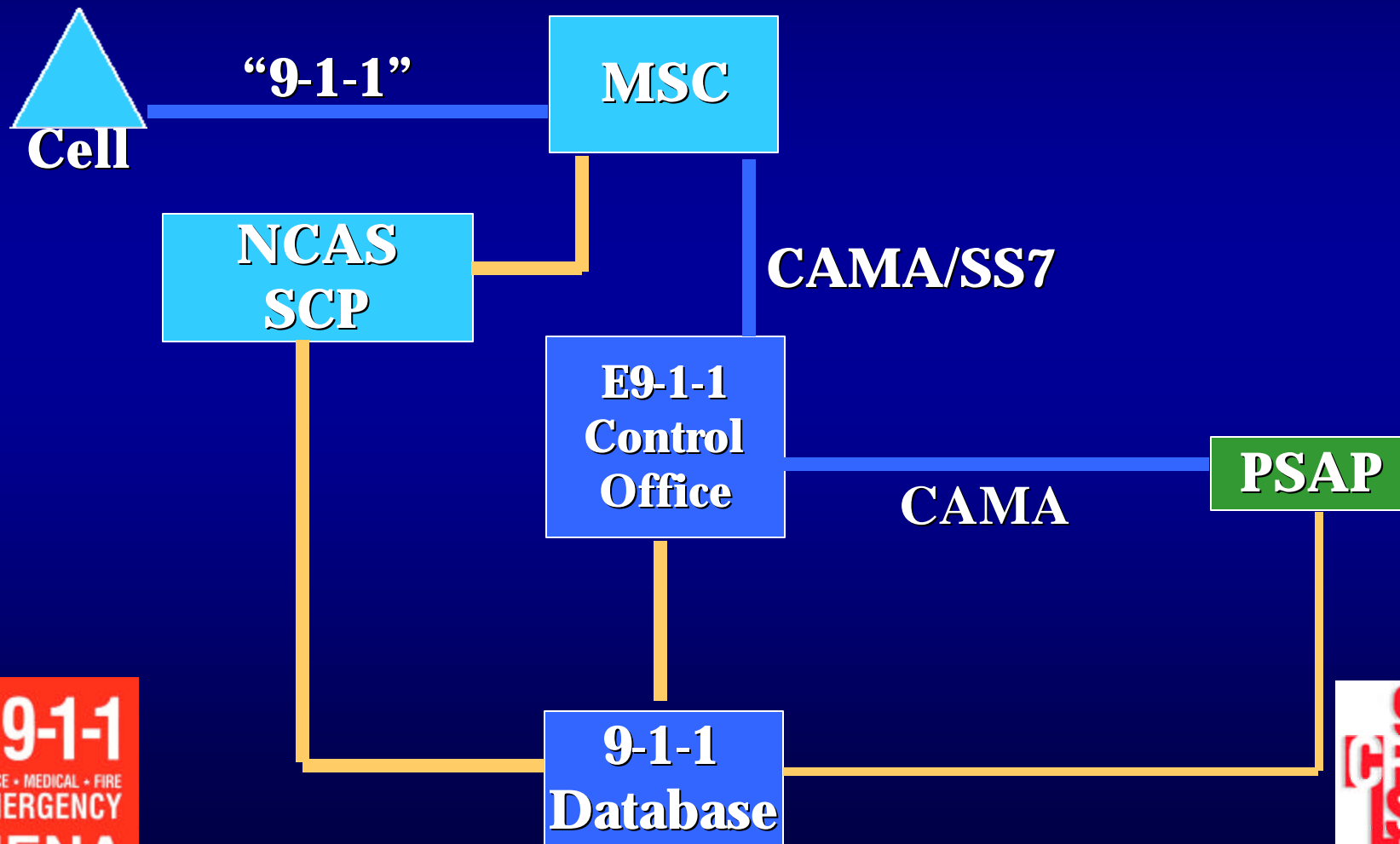
Phase I: Delivery of ESRD + CPN Call path Associated Signaling (CAS)



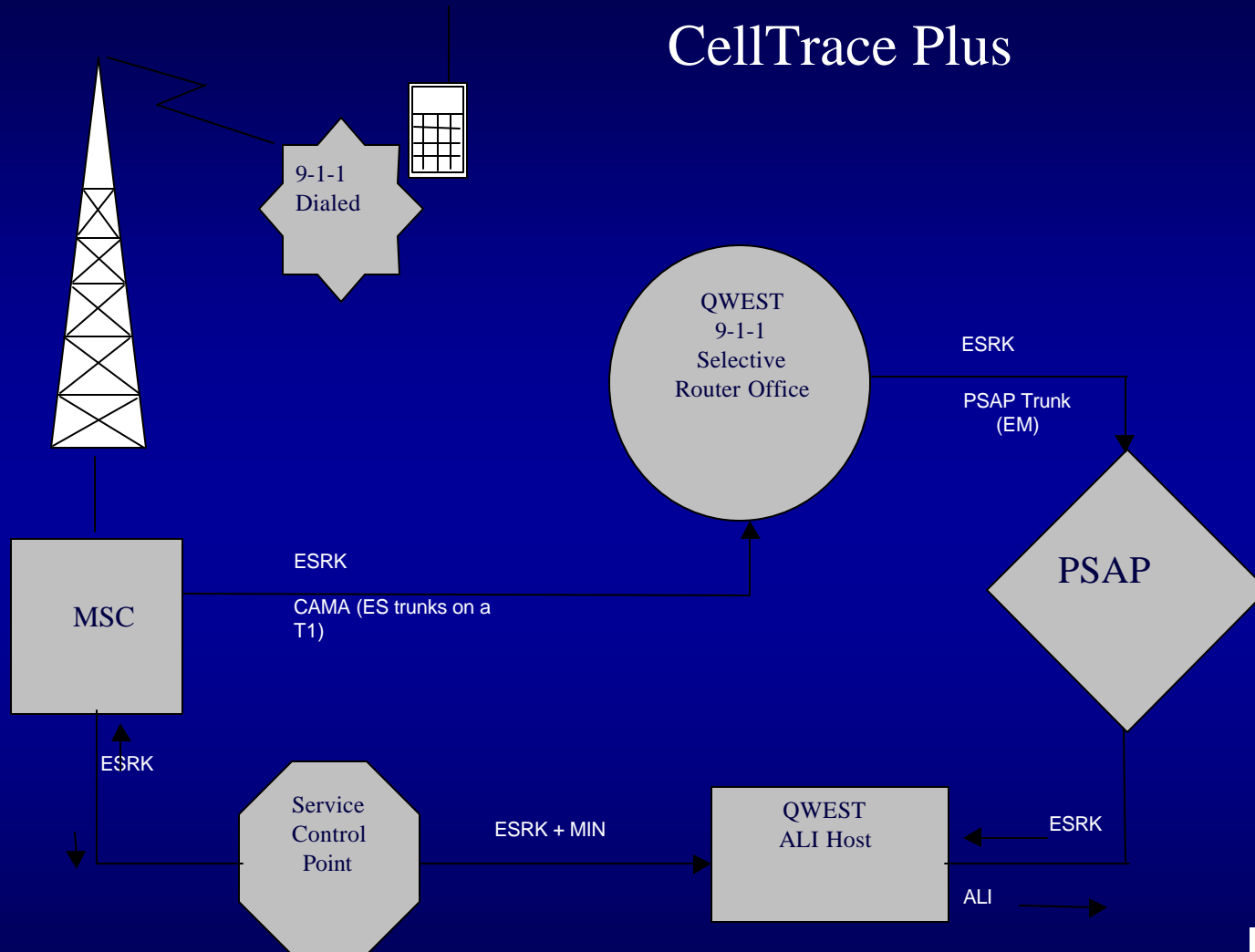
CellTrace



Phase I: Delivery of ESRK + CPN Non Call path Associated Signaling (NCAS)



CellTrace Plus

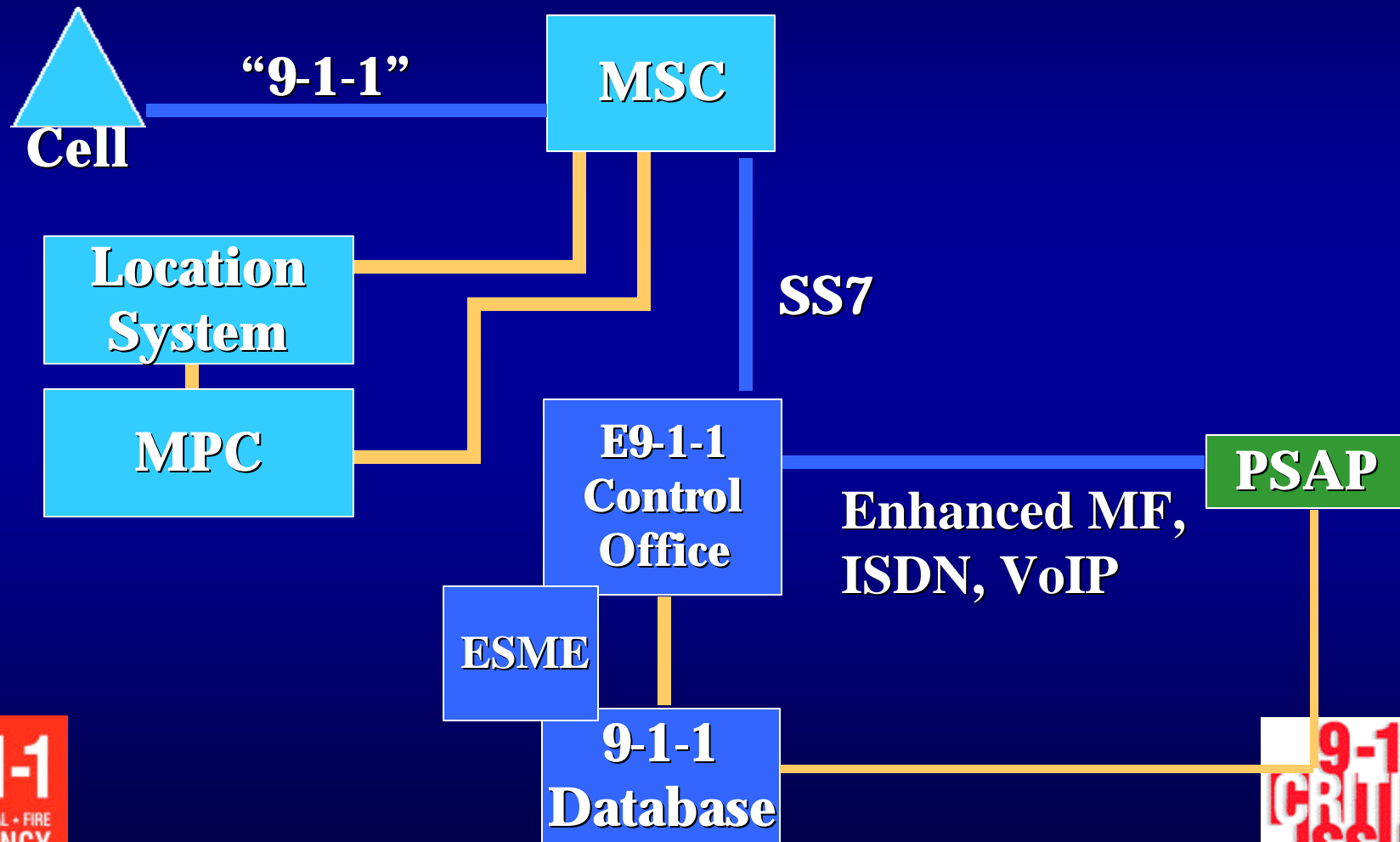


Phase II Terminology

- **MPC**
 - Mobile Positioning Center
 - Function located in the Wireless network
 - Transmits location coordinates to 9-1-1 network
- **ESME**
 - Function located in 9-1-1 network
 - Receives location coordinates from MPC

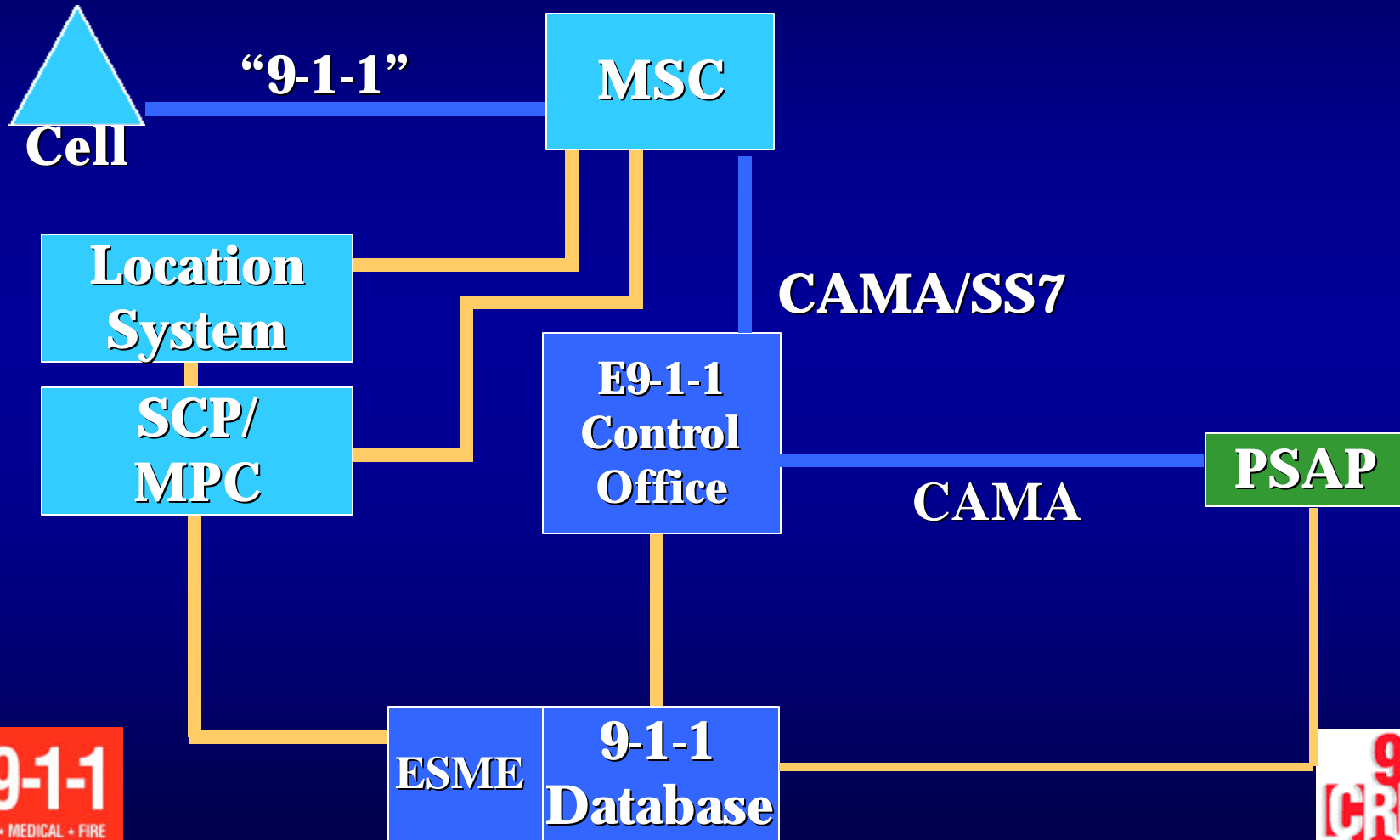
Phase II: CAS

ESRD, CPN and Location

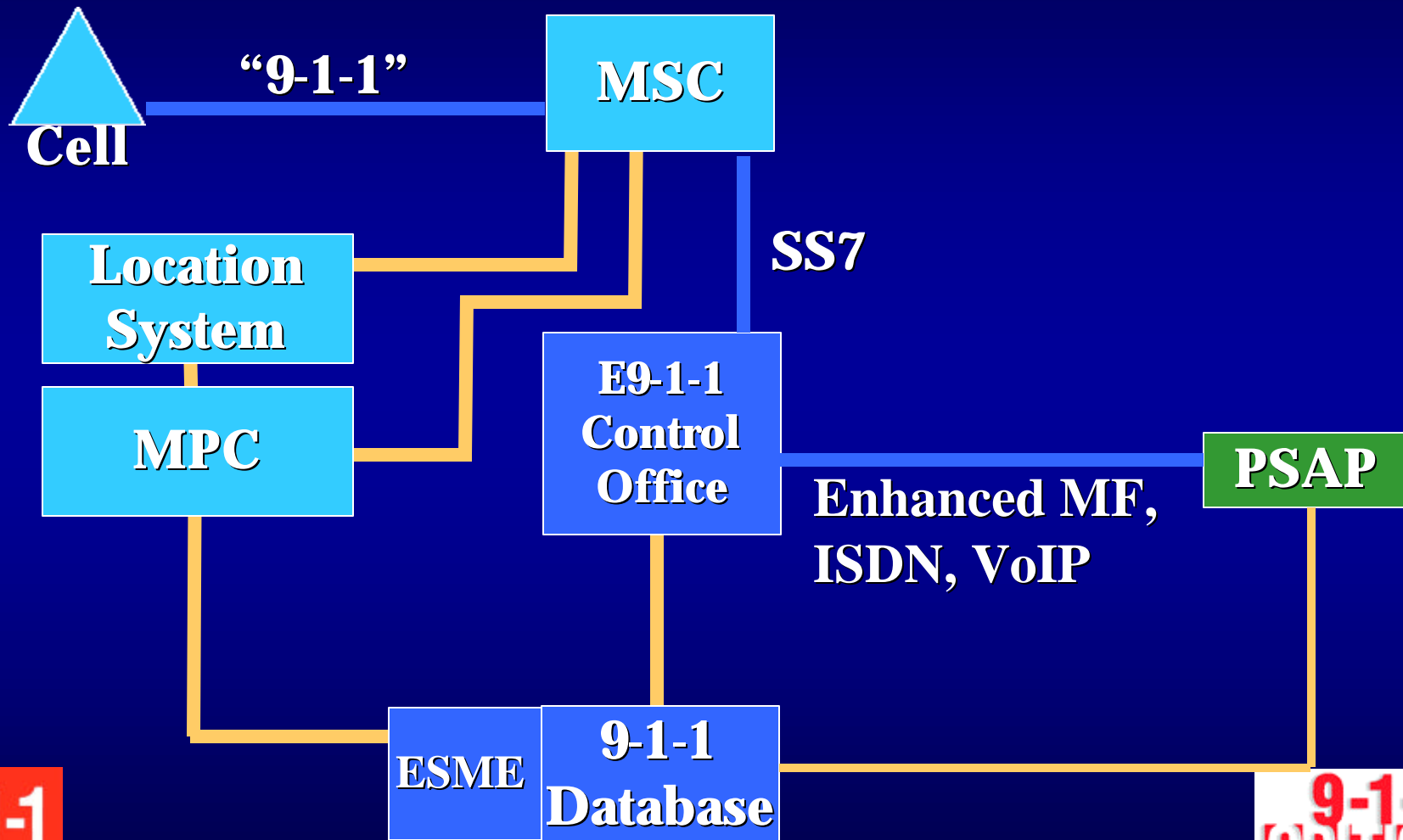


Phase II: NCAS

ESRK, CPN and Location



Phase II CAS/NCAS Hybrid



Characteristics of Success in Qwest Region

- Use Existing Network Elements to Deploy Quickly with Least Amount of Disruption
- Provide a Solution that Allows all Customers to be able to Answer Phase I and Phase II Wireless TODAY.
- Project Leader focused on wireless deployment.

Characteristics of Success in Qwest Region

- Surcharge legislation.
- State-wide decision-maker.
- State-wide/Region-wide deployment plan.
- Open architecture.
- Standard contract/agreement
- Standard ALI format.

Deployment Status

- COLORADO-27 Counties-10 Carriers deployed-3 million subscribers 80% deployed
- ARIZONA--3 Carriers deployed-4th due in February, 3 Carriers with contracts, only 1 Carrier without contract
- OREGON--5 Carriers deployed, 2 million subscribers
- MINNESOTA--1 Carrier deployed with 120,000 subscribers, 3 Carriers with signed contracts with deployments schedule for first and second quarters 2001

Deployment Status

- NORTH DAKOTA--1 carrier with contract, almost deployed
- MONTANA--BILLINGS SUCCESSFUL PHASE II TRIAL
- WA--TWO SUCCESSFUL PHASE II TRIALS--3 COUNTIES, 2 Carriers with signed contracts, 1 Carrier in the signature process. Other counties must wait until FCC decision.
- IOWA--



Iowa's Success

- Champion for wireless is established by legislative process
- Strong PSAP community forum
- Developed a vision and stuck to that overall vision
- Built consensus around elements of plan

Rural Challenges

- PSAP boundaries cover larger area, less population
- Each carrier has to work with each PSAP
- Cell towers cover larger geographical areas
- Funding limited if tied to population size
- More difficult to reach consensus.

PSAP Responsibilities

- Understand Technology Choices available to wireless carriers and how these interface with existing 9-1-1 Network.
- Review and Approve Carrier Test Plans.
- Need to coordinate testing timeframes with carriers.
- Need to provide approval prior to turn-up.

PSAP Responsibilities

- Need to Understand and Agree to Default Routing Plans
- 24 x 7 Contacts Needed, Not Easy to Obtain.
- Disaster Recovery Plans Need to be Reviewed/Modified with Introduction of Wireless.

Cost Factor Considerations

- Provide for rural wireless carrier higher per subscriber costs in calculating reimbursement funding.
- Ensure surcharge funds go for wireless 9-1-1: carrier PSAP upgrades, Database, LEC Selective Routing

Phase II Considerations

- Phase I is fall-back for Phase II service.
- Phase I and Phase II can be implemented in parallel.
- Majority of Phase II solutions either network-based or handset-based are dependent upon Phase I information.
- Carriers must include plans for Phase I implementation as part of Phase II deployment.