



# BANDWIDTH

**E9-1-1 For No ANI, Outbound-only VoIP**

April 26, 2012

# Bandwidth's Perspective

- **Responding to the queries as requested by the PSHSB**
- **Draw upon our significant technical capabilities, involvement in standards bodies, and our awareness of related initiatives**
  - Location Determination
  - Acceleration of migration to NG9-1-1
- **Focus on the technical solutions and the economic feasibility of the solution**
  - Both addressed in NG9-1-1

# Similarities with NSI Phones

- **Similarities**

- No callback number (ANI)

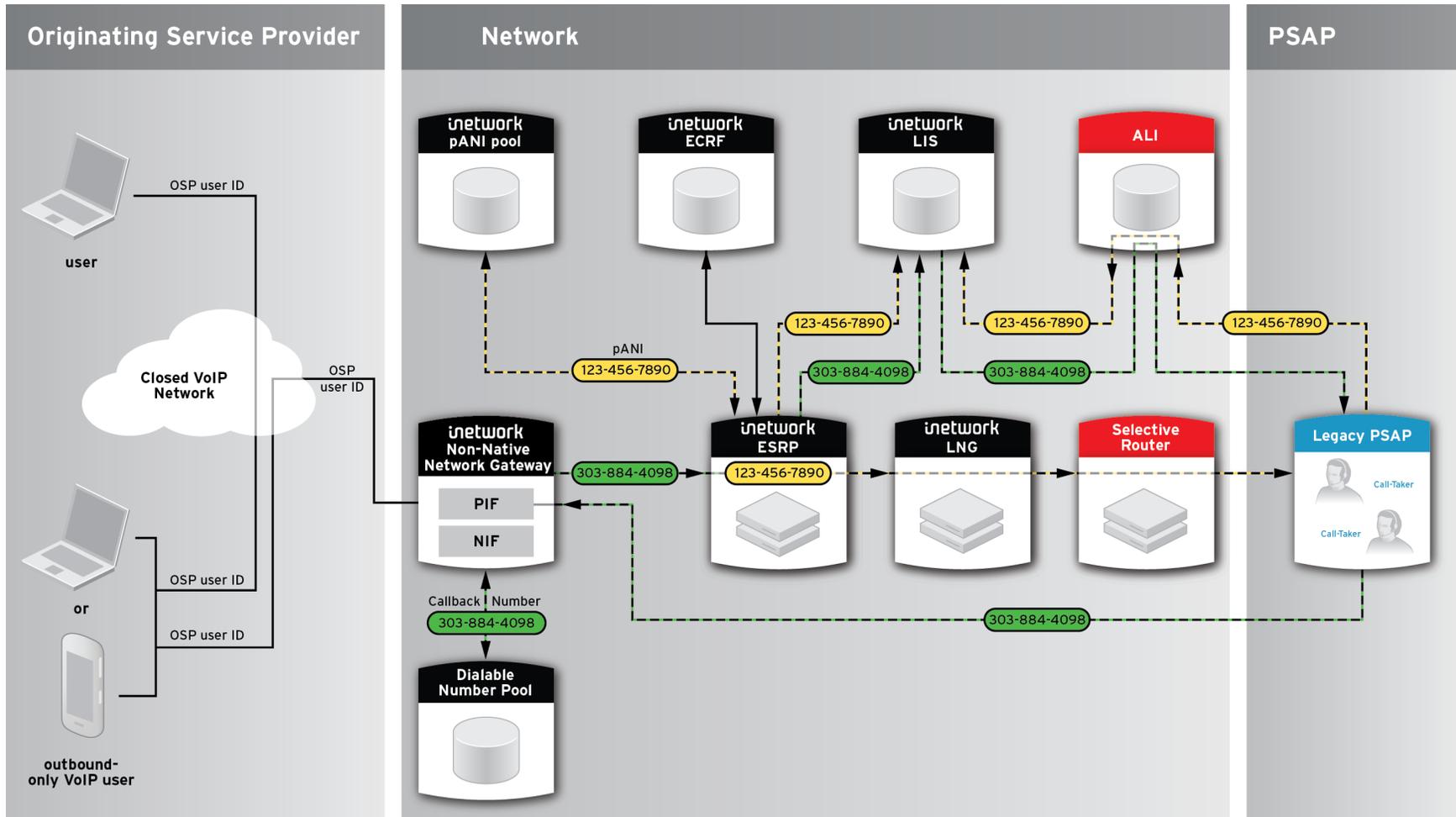
- **Differences**

- Subscriber registers for outbound-only service (Advantage Outbound-only VoIP)
- Subscriber pays for outbound-only service (Advantage Outbound-only VoIP)
- The outbound-only VoIP subscriber has two way service within the network. It's outbound-only with respect to the PSTN (Advantage Outbound-only VoIP)
- Location information available on an NSI Phone (Advantage NSI wireless phones)

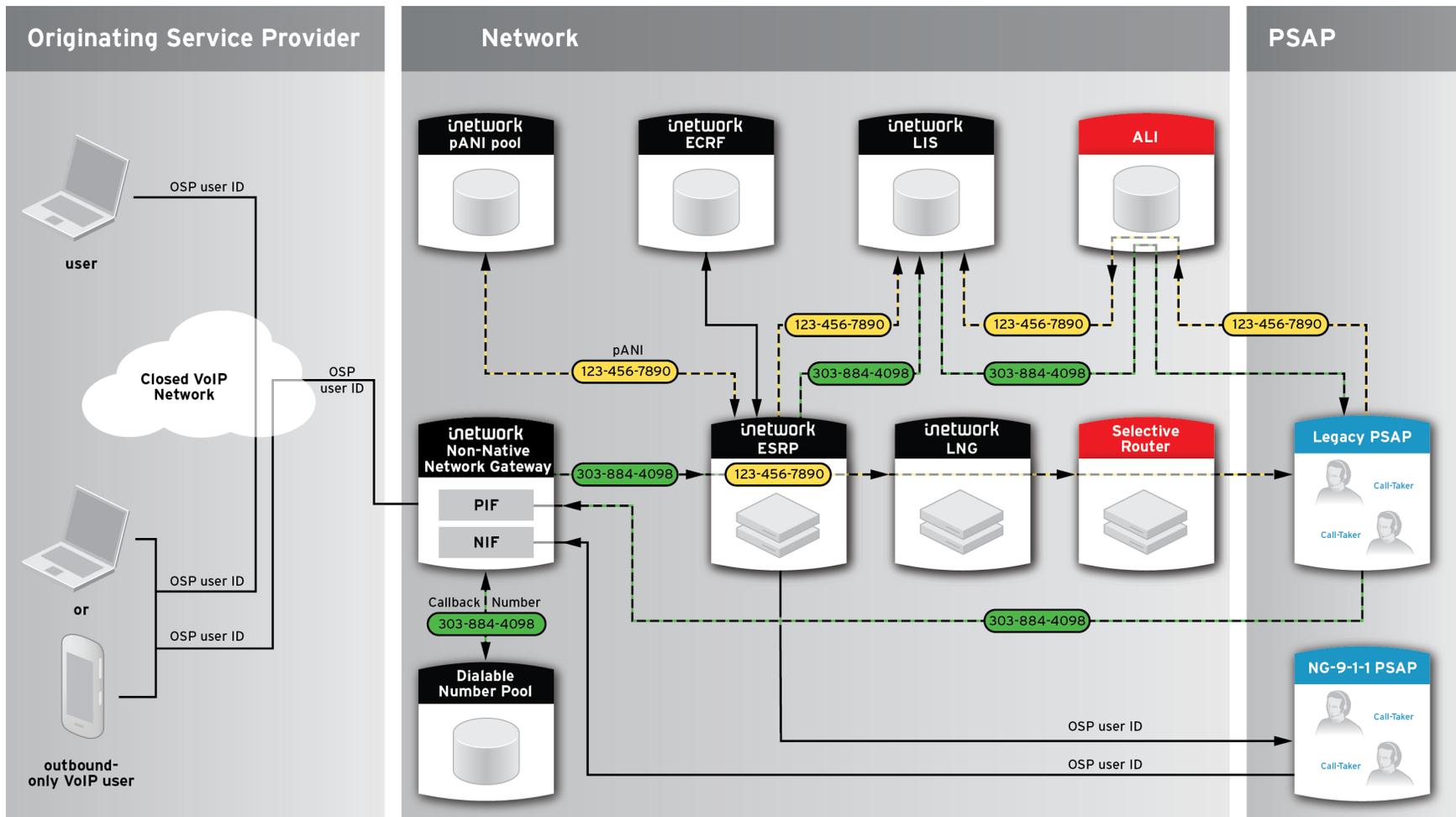
# Technical Challenges to Providing Effective 9-1-1 for No-ANI, Outbound-Only VoIP

- **Bridge between the closed, non-native (with respect to SIP) network and the PSTN**
  - Protocol conversion
  - Callback number for PSAP use
- **Subscriber information for PSAP Use**
- **Location information**
  - For Nomadic
  - For Mobile
    - No different than 2-way VoIP service on a mobile device

# Bridging Between the Closed VoIP Network & 9-1-1 – Legacy Connectivity



# Bridging Between the Closed VoIP Network & 9-1-1 – NG9-1-1 Connectivity



# Addressing the Missing Subscriber Information Challenge

- **Information collection/provisioning coincident with subscriber ordering service**
  - Subscriber information gathered
  - Stored on the device or in the Service Provider Network
- **Information forwarded when 9-1-1 is dialed**
  - Subscriber information is encoded into the SIP body
    - Pre-provisioned in the device or provisioned on-the-fly in the network
- **Information used when call is received by Bandwidth**
  - Subscriber information is decoded and entered into the Location Information Server (LIS) real-time
- **Information available when requested by the PSAP**
  - LIS provides the information

# Addressing the Location Determination Challenge

- **For Nomadic VoIP**
  - Existing regulations contemplate use of “registered location”
  - Stored in the device or in the Network
- **For Mobile VoIP**
  - Location challenges are not unique to outbound-only VoIP Service
  - Hosted on GPS-enabled devices – Use GPS
  - Hosted on cell phone
    - Commercial location services
  - Pre-registration of common locations
    - Home, Business
    - Other “learned” locations
  - Combinations of the above
  - New Technologies

# Economic Feasibility

- **Financial consideration: Cost of service**
  - Several economically feasible models
    - Per call or per subscriber per month
  - Economics of NG9-1-1 make it more affordable
- **Financial consideration: Collection and remittance of fees**
  - Must be addressed
  - System should minimize administration costs to maximize funds for 9-1-1 Authorities
    - Per call payment made directly to the receiving 9-1-1 Authority?
  - Transition to NG9-1-1 will require rethinking funding process