
Wireless E 9-1-1 Technologies and Processes

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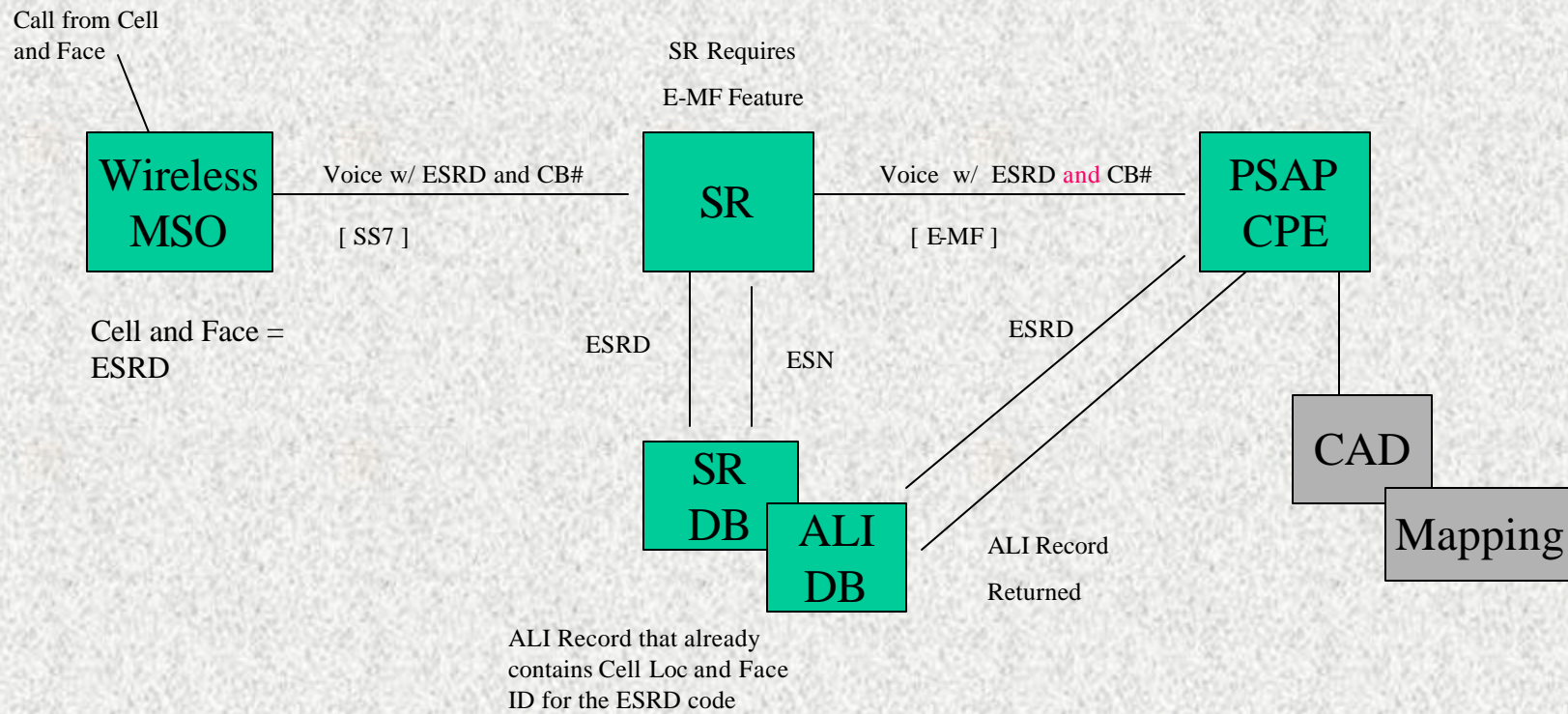


Wireless Phase I Solutions

- There are three basic technical solutions:
 - NCAS (Non-Callpath Associated Signaling)
 - CAS (Callpath Associated Signaling)
 - Hybrid (CAS to SR, NCAS to PSAP)
- NCAS/SCP uses more individual components (no change at PSAP, unless on-site ALI is involved)
- CAS requires higher levels of signaling in the 9-1-1 network
- `Hybrid' is in between (may be no change at PSAP)
- NCAS/SCP is seen by some as the `default' version, because the others require 9-1-1 system upgrades to be workable

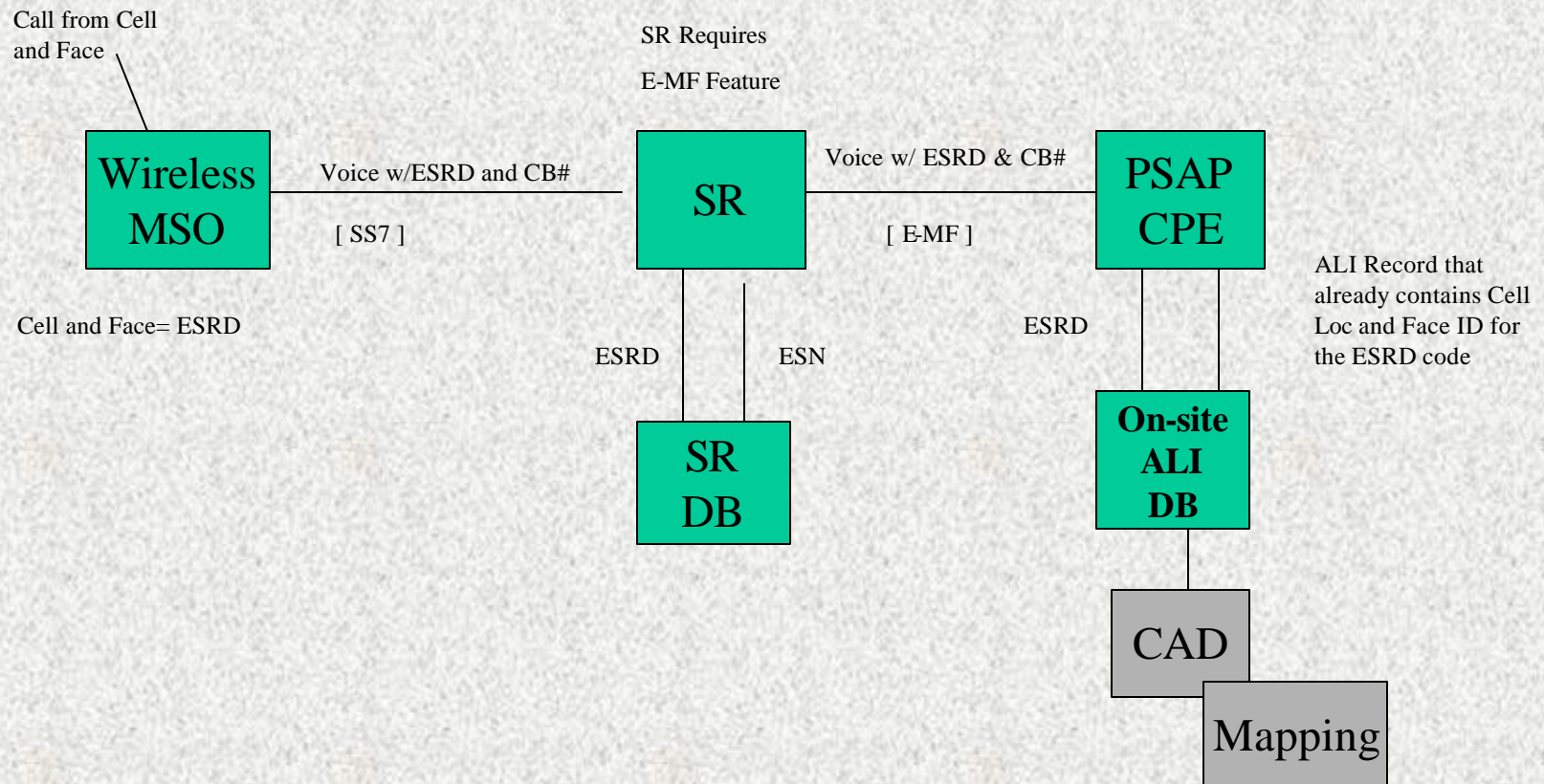
Wireless Phase I Solutions

CAS



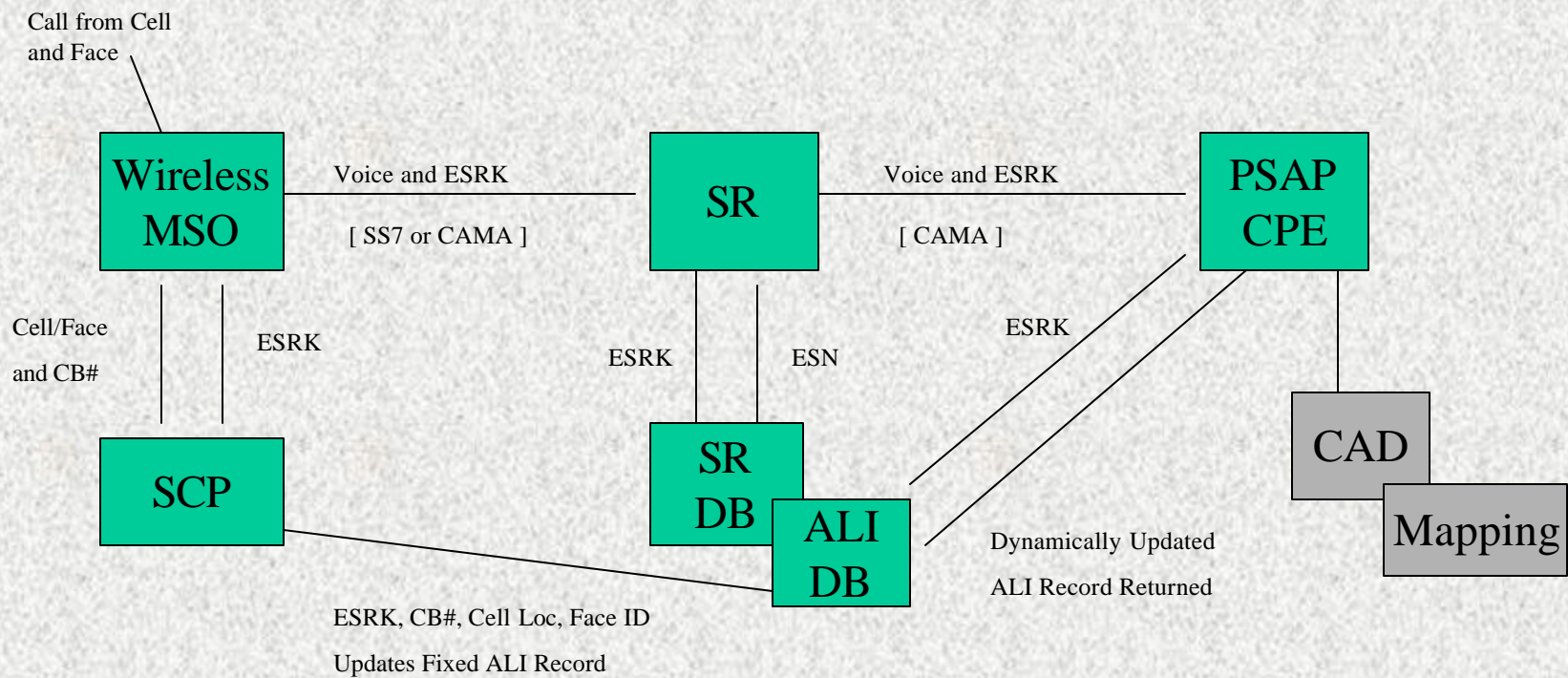
Wireless Phase I Solutions

CAS with on-site/local ALI



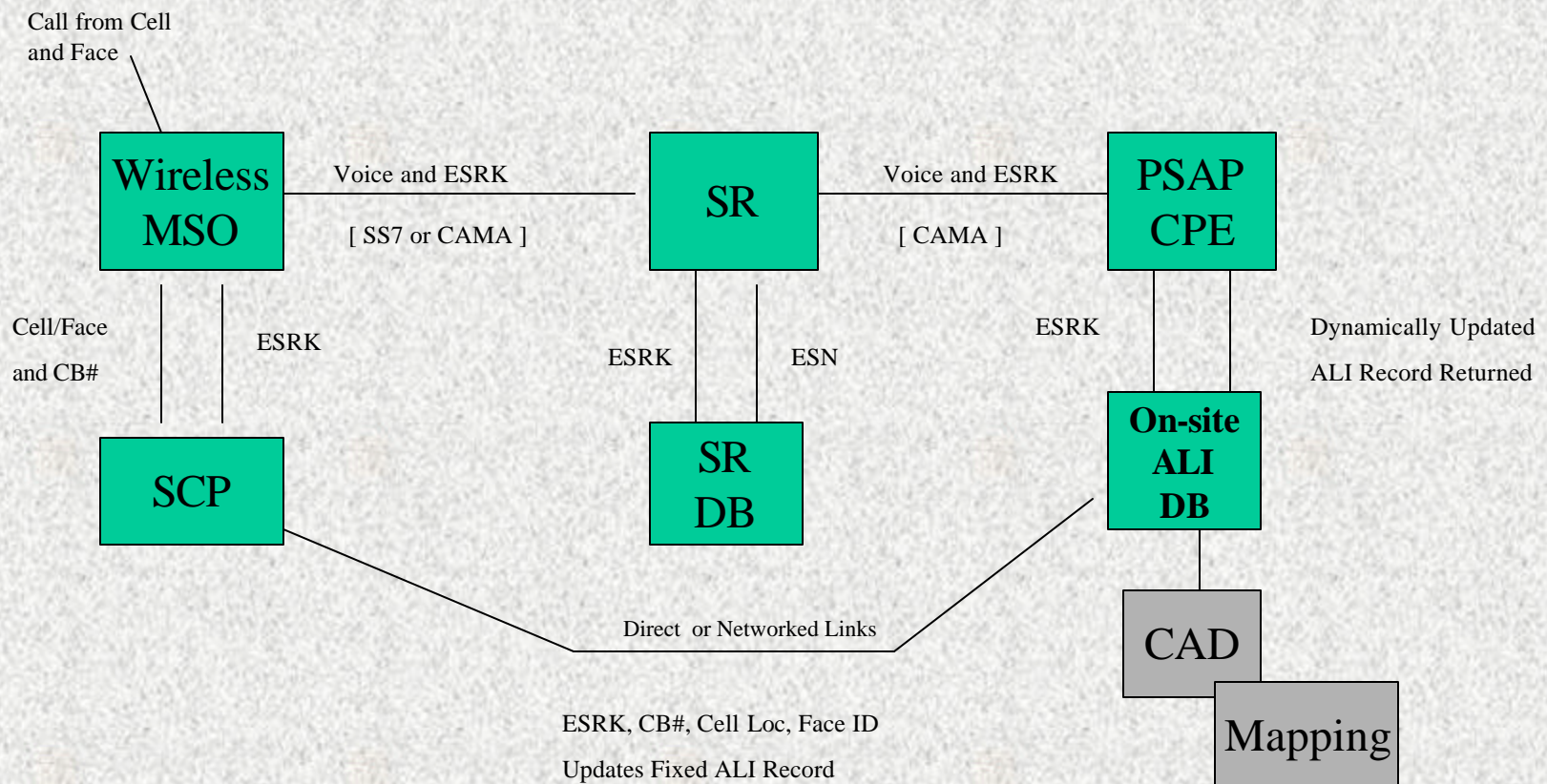
Wireless Phase I Solutions

NCAS/SCP



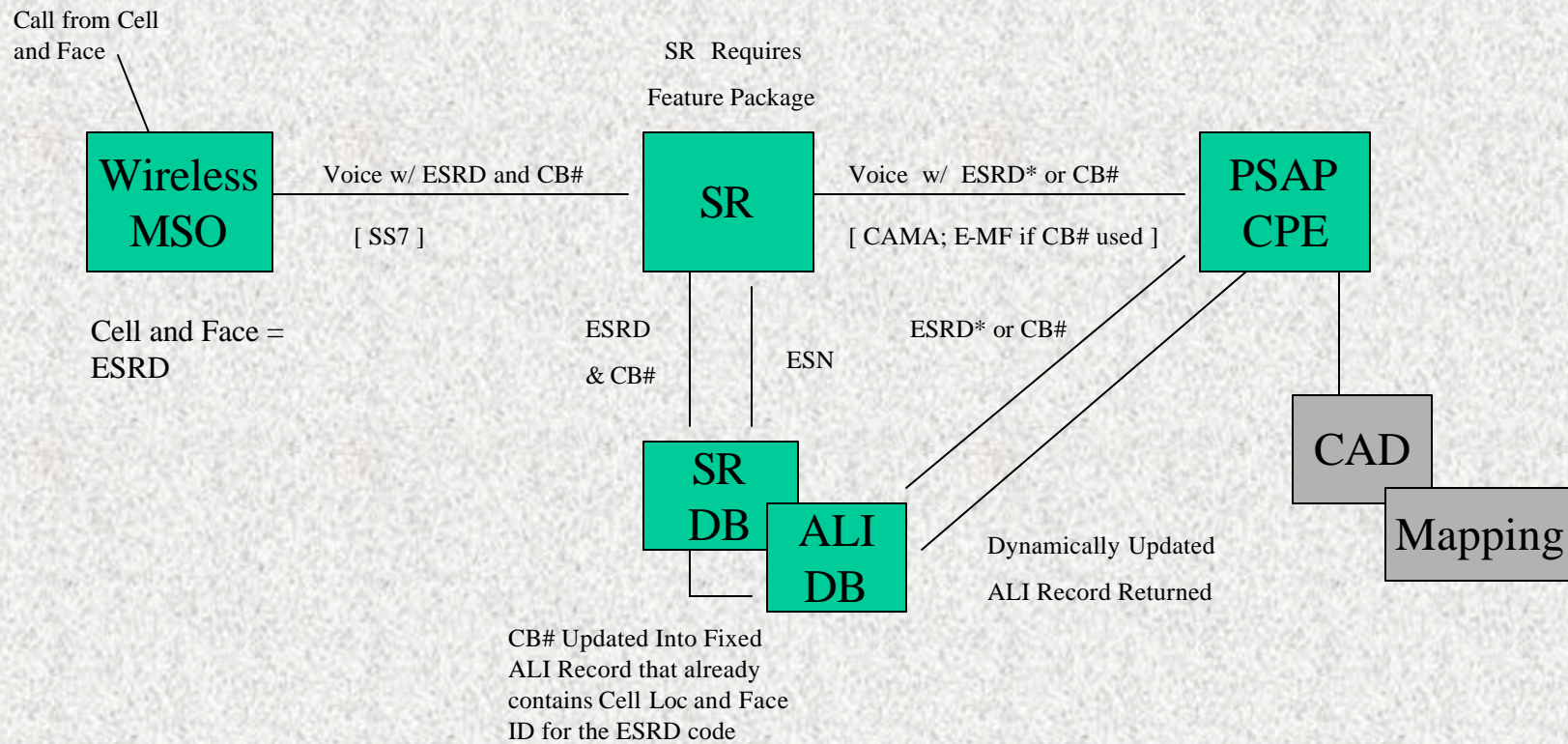
Wireless Phase I Solutions

NCAS/SCP with on-site/local ALI



Wireless Phase I Solutions

Hybrid



ESRKs and ESRDs

- ESRKs (Emergency Service Routing Key)
 - utilized in NCAS/SCP systems
 - a range of ESRK numbers are used to represent a set of towers/sectors associated with each calltaking PSAP's service territory
 - ESRKs within range are used in sequence as calls occur to allow unique ID per call
 - ESRKs are not tower or sector specific
 - specific tower location and sector info is dynamically updated per call
- ESRDs (Emergency Service Routing Digit)
 - utilized in Hybrid and CAS systems
 - one number per tower and sector
 - each call from a given tower and sector uses same ESRD
 - specific tower and sector info is held in fixed ALI record

511 Numbers for ESRDs and ESRKs

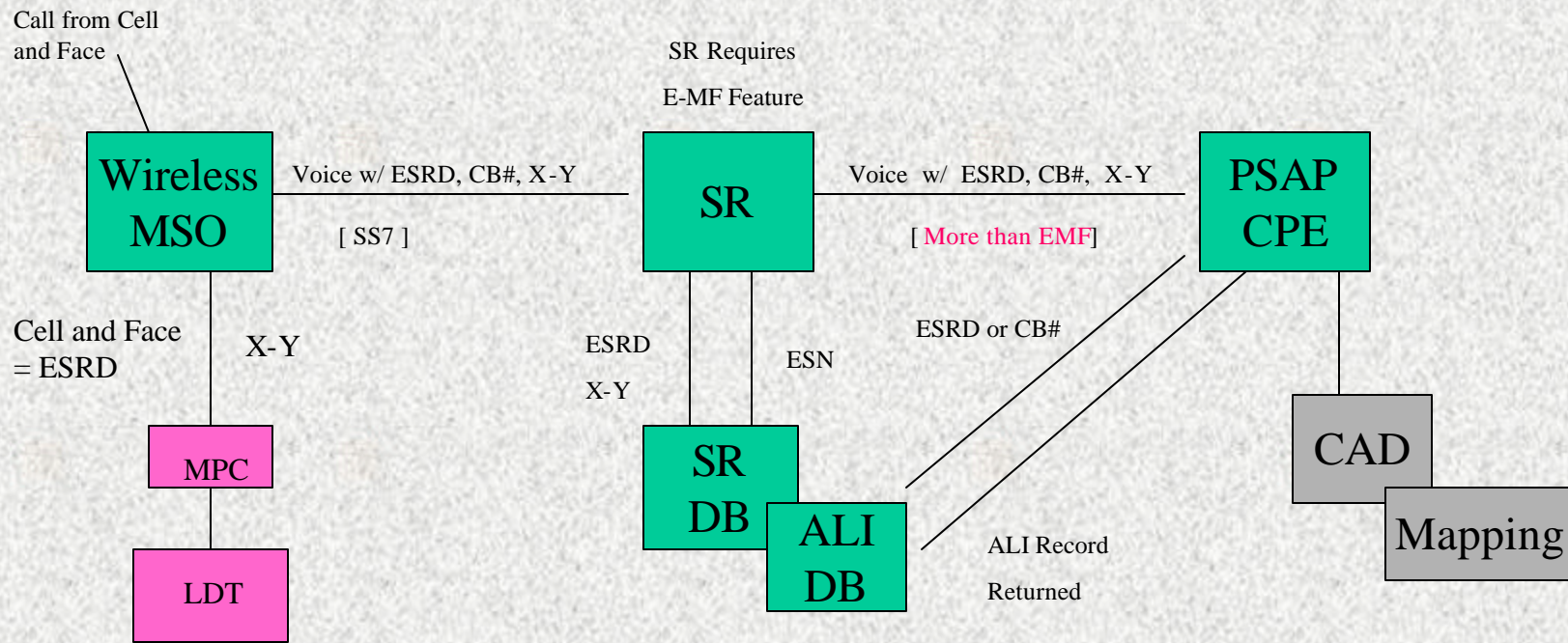
- Significant areas of the US are using 511 NXX numbers in the home NPAs of the Selective Routers for ESRKs and ESRDs
- Typically a 9-1-1 host telco administers for all users in a given area
- This does not conflict with the 511 service code now defined nationally for travel information
- Efforts underway to deal with two issues:
 - certain MSC types need changes to make these non-dialable
 - the national number plan needs to formally define these codes as reserved for wireless 9-1-1 service purposes

MSAG and ALI Content

- Wireless MSAG records require a different structure for NCAS/SCP as compared to `Hybrid' and CAS approaches
- It is possible to utilize a common approach for ALI record field usage across all wireless methods
- This supports common screen layout across all PSAPs so that calltakers see same field usage for transferred calls
- Several states are attempting to define common field usage and display content. NENA has embarked on a national effort through the Tech and Operations Committee process, with the initial output planned for 1Q 2002.

CAS - Wireless Phase II Solution ?

CAS

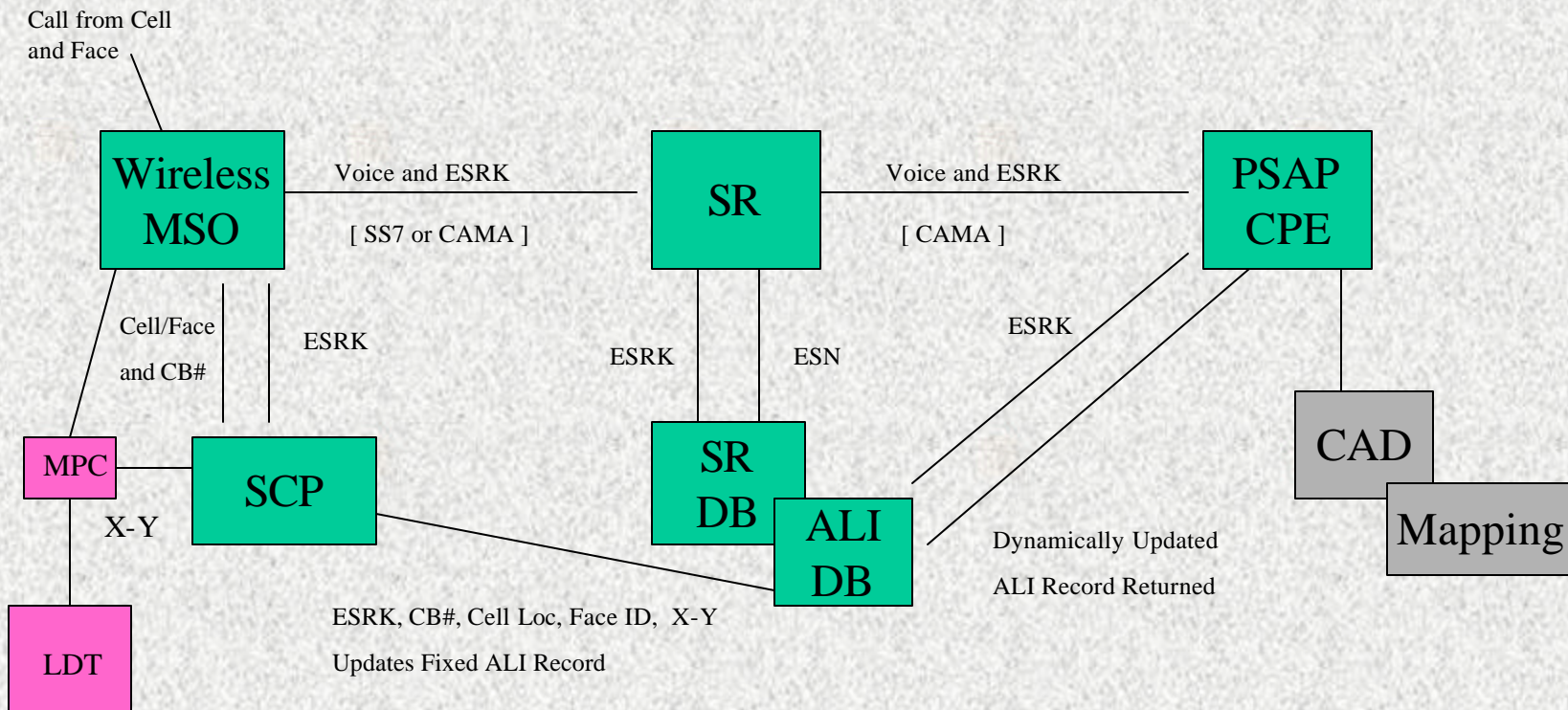


Location Detection System must be able to provide X-Y to MSC prior to 9-1-1 call origination by MSC

ALI Record that already contains Cell Loc and Face ID for the ESRD code

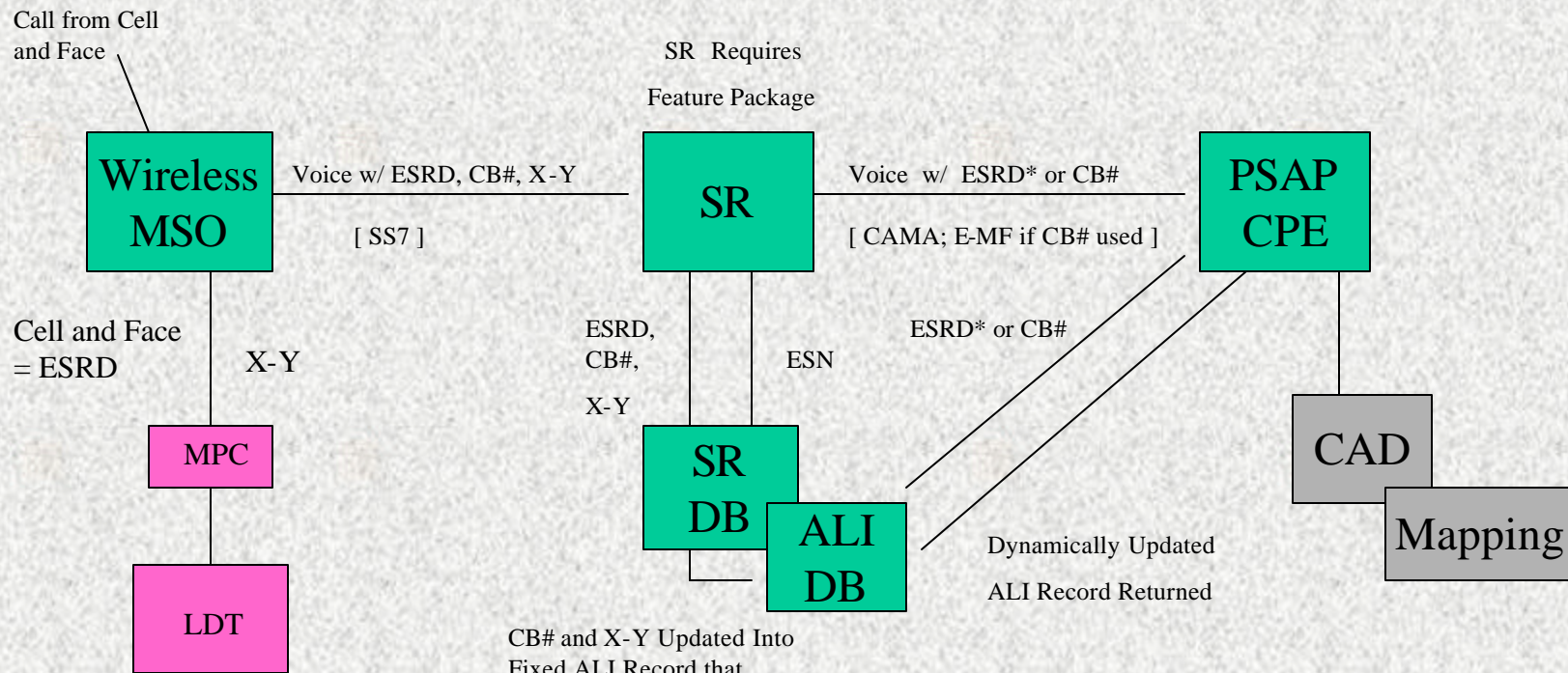
NCAS Wireless Phase II Solution

NCAS/SCP



Hybrid Wireless Phase II Solution

Hybrid



Location Detection System must be able to provide X-Y to MSC prior to 9-1-1 call origination by MSC

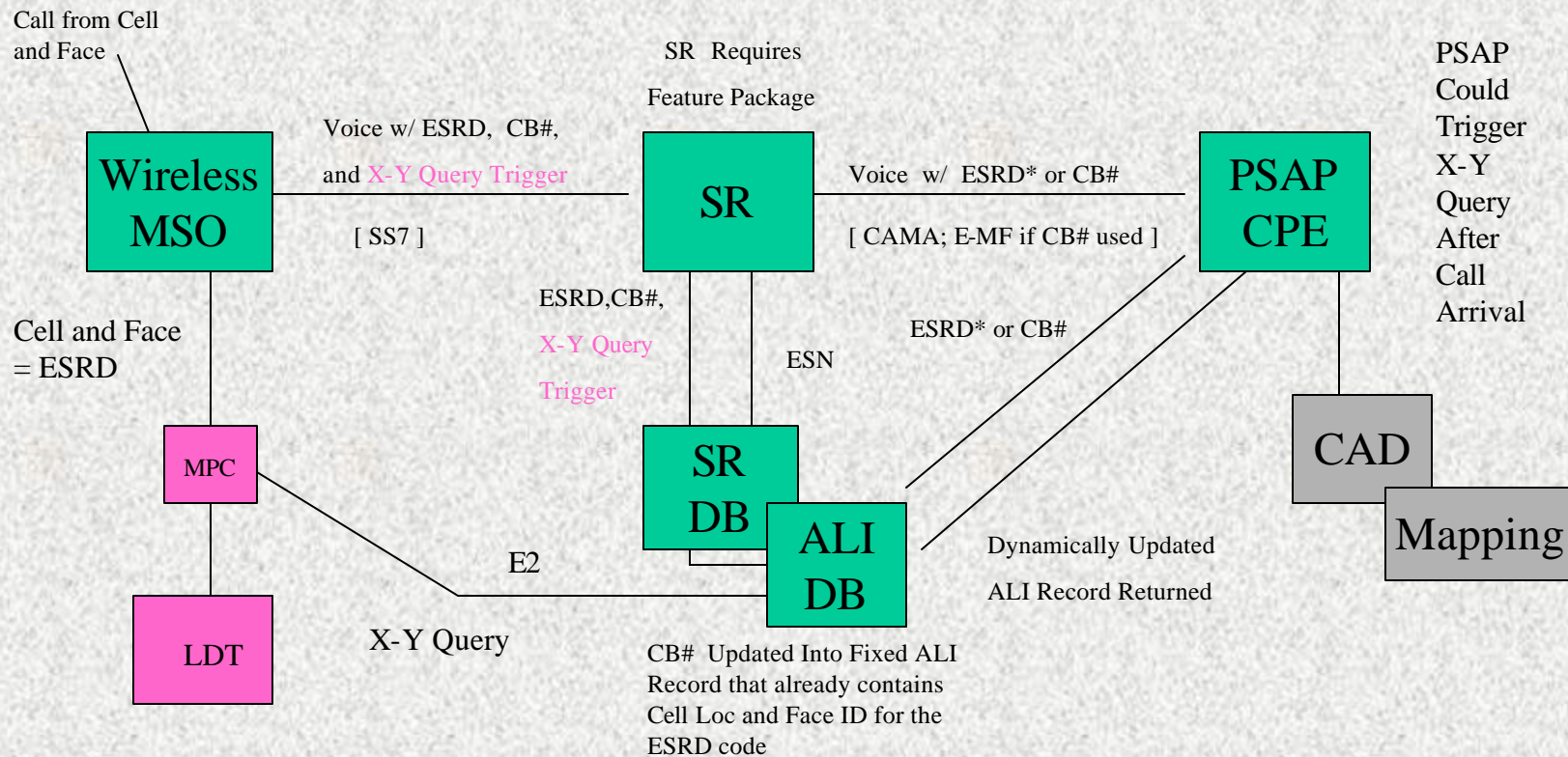
CB# and X-Y Updated Into Fixed ALI Record that already contains Cell Loc and Face ID for the ESRD code

* May be CALLID in DMS-100 SRs

Probable/Possible Hybrid Wireless Phase II Variations

Hybrid

If X-Y not available prior to MSC forwarding call, X-Y could be queried from either ALI Server or PSAP CPE. Variations would require software in LDT, SR and ALI Server.



* May be CALLID in DMS-100 SRs