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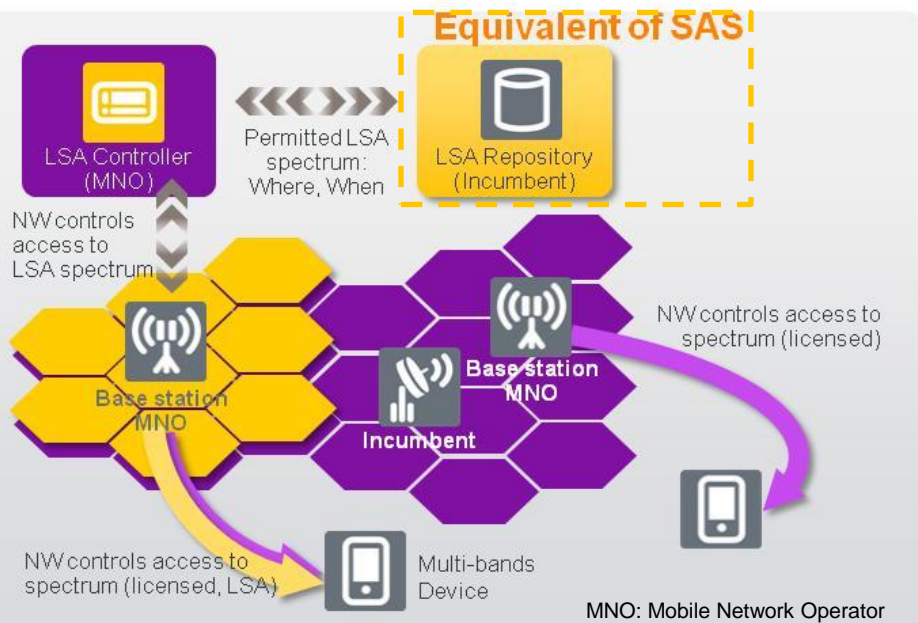# Some Key SAS Technical Requirements & Band Planning in 3.5GHz

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FCC Workshop 14-January-2014
Spectrum  Access System in 3.5 GHz

# Authorized/Licensed Shared Access (ASA/LSA)



Equivalent of SAS

LSA Controller (MNO)

Permitted LSA spectrum: Where, When

LSA Repository (Incumbent)

NW controls access to LSA spectrum

Base station MNO

Incumbent

Base station MNO

NW controls access to spectrum (licensed)

NW controls access to spectrum (licensed, LSA)

Multi-bands Device

MNO: Mobile Network Operator

- **FCC should only define the SAS functional responsibilities, key high level requirements and various players' roles.**

- **Examples of high level requirements: need for authentication and security on the various interfaces, need for positive identification of network actions to be reflected in the SAS, etc.**
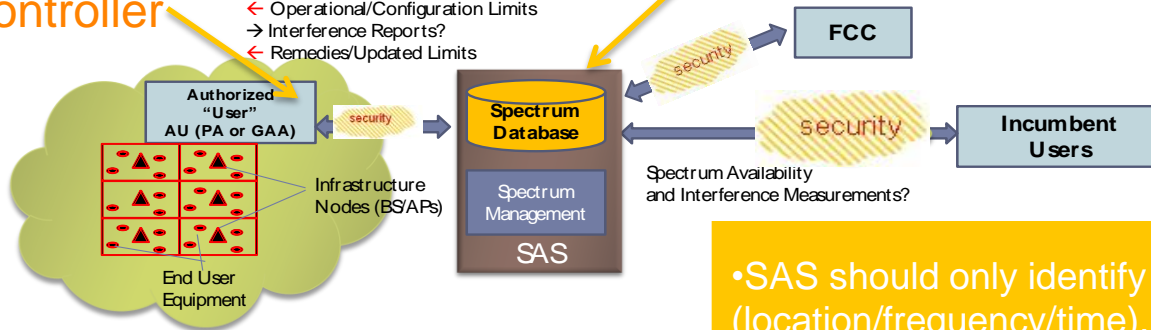
- **Detailed requirements and interfaces should be defined by industry groups and standardization bodies that ideally include participation by the incumbent spectrum users, mobile operators, other potential new users, suppliers and regulators.**

# SAS Functional Responsibilities

Equivalent of ASA/LSA Repository

Controller

→ Capabilities and Configurations?
← Operational/Configuration Limits
→ Interference Reports?
← Remedies/Updated Limits



Authorized "User" AU (PA or GAA)

security

Infrastructure Nodes (BS/APs)

End User Equipment

security

FCC

Spectrum Database

Spectrum Management

SAS

security

Incumbent Users

Spectrum Availability and Interference Measurements?

- SAS should only identify and authorize spectrum usage (location/frequency/time), perhaps enhanced with technical requirements such as interference threshold.
- SAS should not configure and/or set limits on various radio parameters.
- A Controller sitting on the Authorized User (AU) side should configure the radios and networks.

# Harmonization and Global Standards Drive Economy Of Scale:
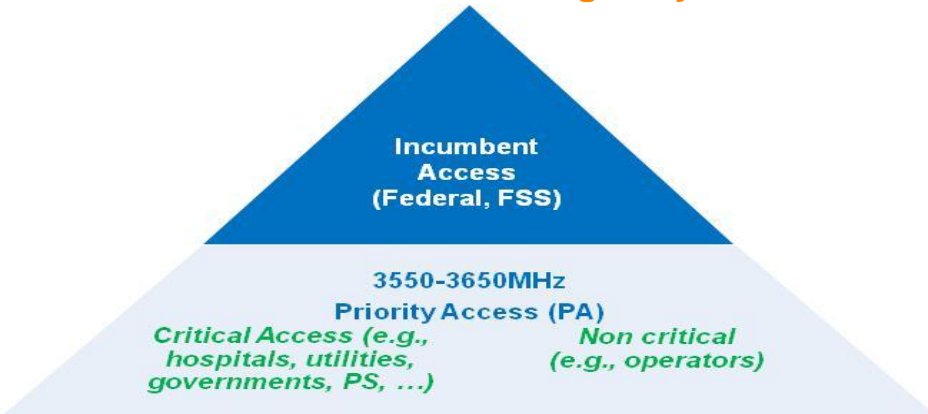## TD-LTE@3.5GHz
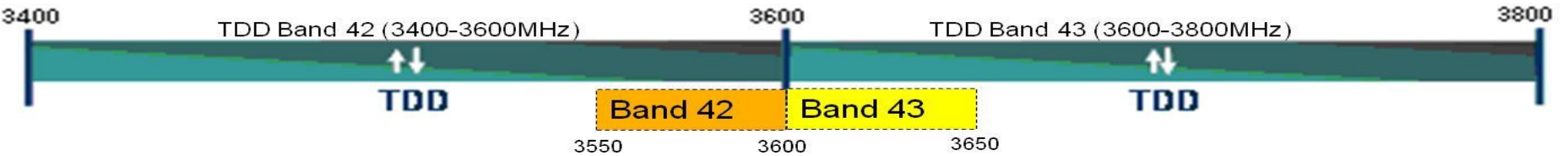


- FCC to define minimum technical requirements, maximize flexibility.
- Use 3GPP TD-LTE Bands 42 and 43.
    - Preferred in Europe and Japan
- 10MHz channels would fit exactly.
- Carrier Aggregation.

# 3550-3700MHz Band Partitioning

**3550-3650MHz:**
**2-tier PA/Incumbents managed by SAS**

**3650-3700MHz:**
**2-tier GAA/Part 90 Licensees managed by SAS**

Incumbent
Access
(Federal, FSS)

3550-3650MHz
**Priority Access (PA)**

*Critical Access (e.g., hospitals, utilities, governments, PS, …)*

*Non critical (e.g., operators)*

Higher Priority
Non-exclusive licensees
under current
3650-3700MHz regime

3650-3700MHz
**General Authorized Access (GAA)**

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