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**Re:** [n/a]

**Abstract:** [This document present the approaches of IEC TC65 and ETSI ERM/TG41 related to the PAR of IEEE802.15.4s

**Purpose:** [This document is a response to the invitation of P802.15.4s]

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# Spectrum resource measurement and management; Approaches of IEC and ETSI

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May, 2016

# Spectrum resource measurement and management

Approaches of IEC and ETSI  
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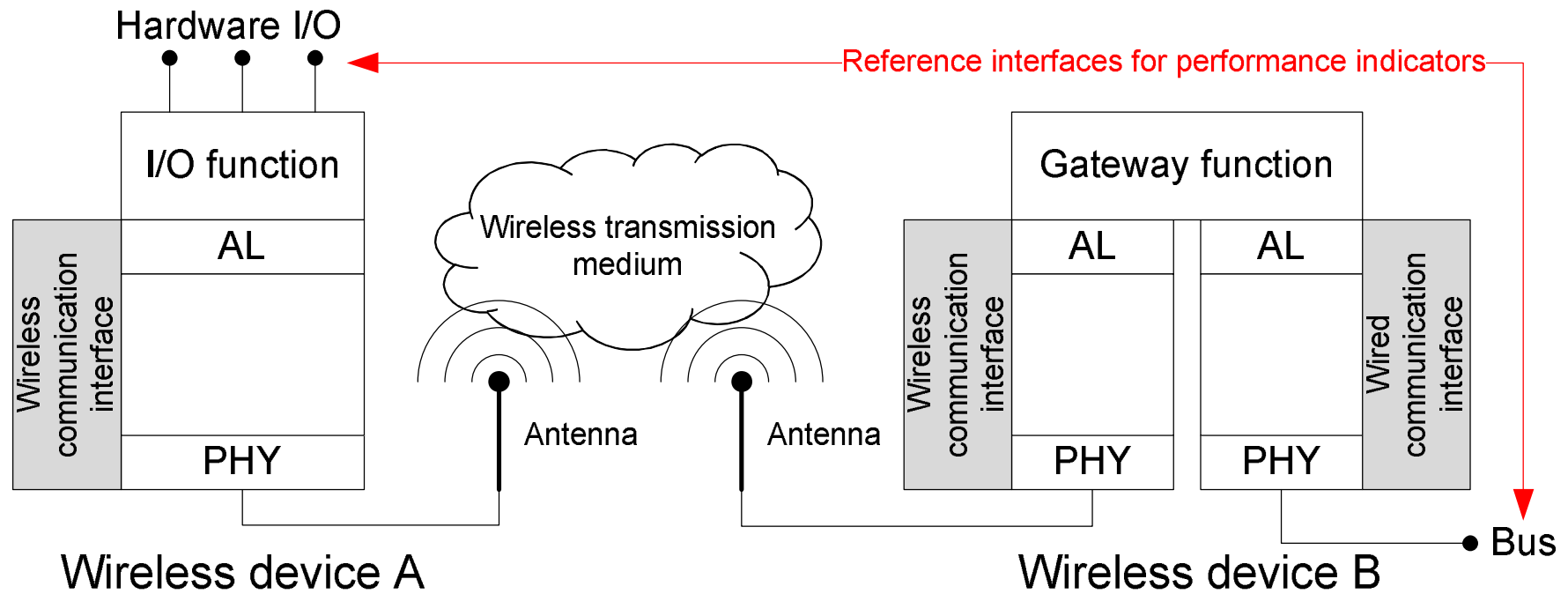
# Concepts in IEC Draft 62657-1

- Geolocation licensing
  - The proposal is to consider the geolocation of the device to control its transmission characteristics. In a non-crowded area or in owned premises (where radio environment can be managed), a license for a specific band should be obtainable from the relevant national regulator.
  - By limiting the range of operation for example to a typical indoor environment, the risk of interference with devices outside the user's premises is eliminated by the attenuation of surrounding walls.

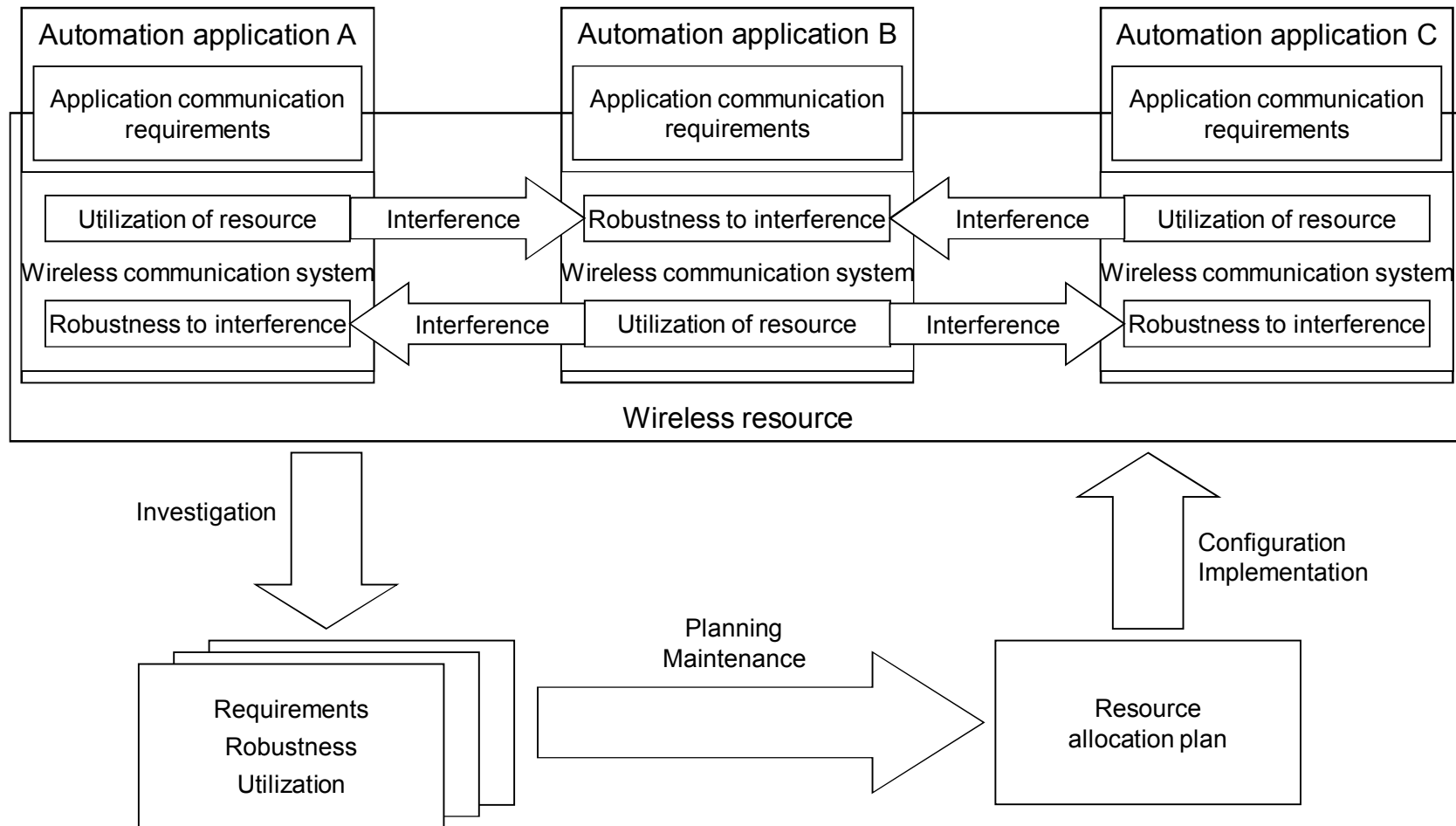
# Reconfigurable Radio Systems (RRS)

- Reconfigurable Radio Systems (RRS) are expected to become important drivers for the evolution of wireless communications and to bring substantial benefits from reconfigurable flexible and cost-effective architectures for wireless devices to a better utilization of the radio frequency spectrum, thereby helping to mitigate the “spectrum scarcity” problem.
- RRS, in particular software defined radio (SDR) and cognitive radio technologies have been investigated in the commercial, public safety and military areas.

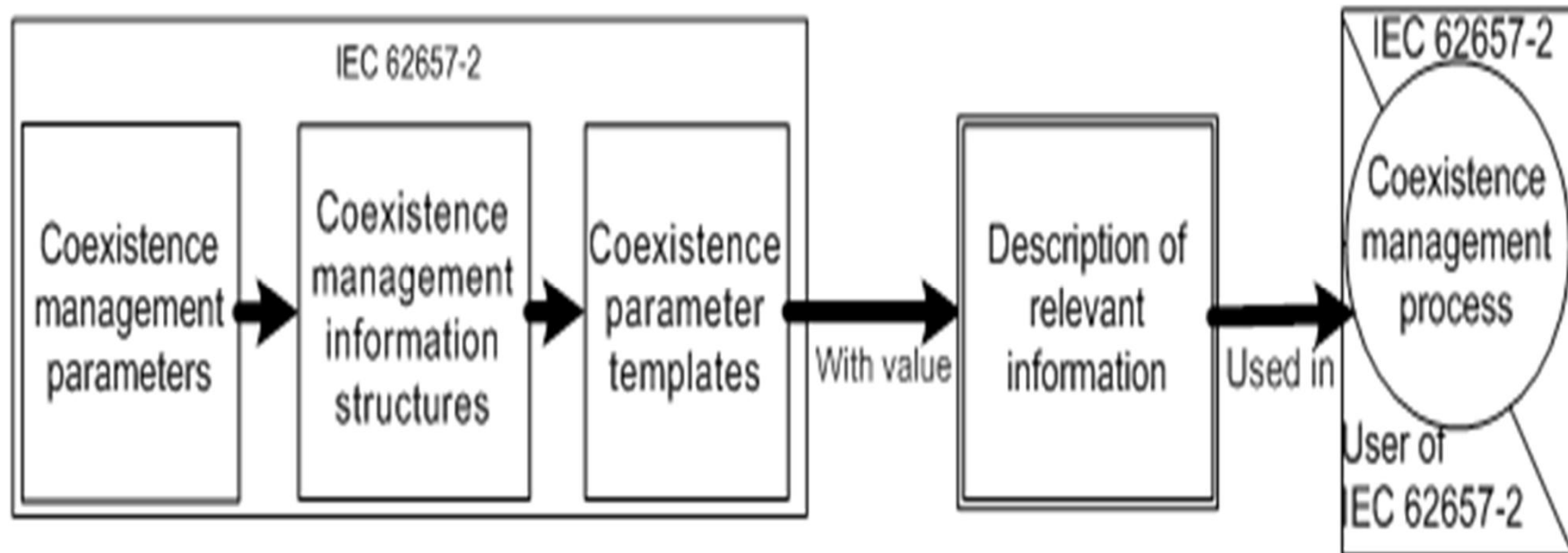
# Reference interfaces



# Coexistence management in IEC 62657-2

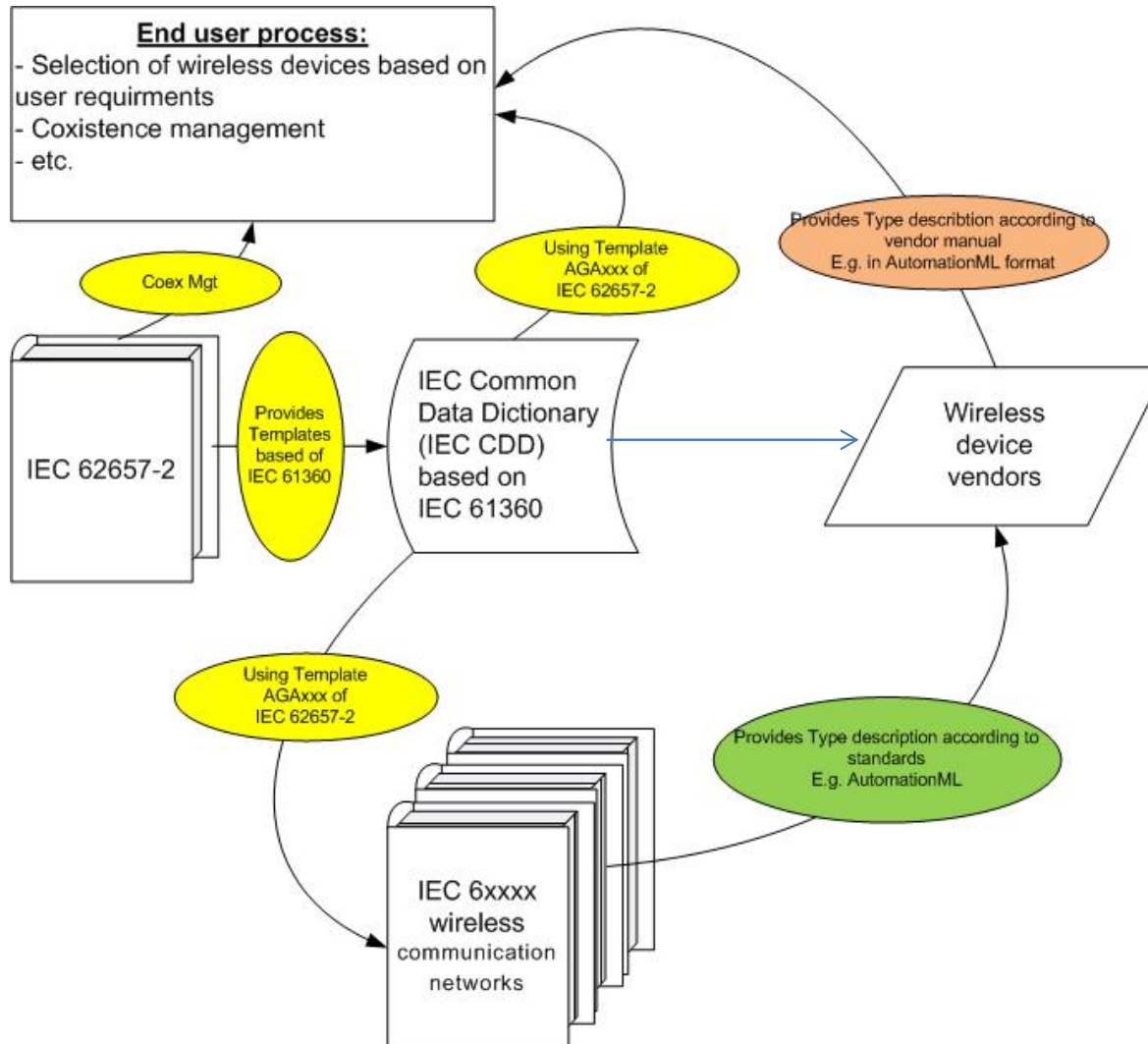


# Principle for use of coexistence parameters





# Common Data Dictionary



# Central Coordination Point (CCP) concept

- ETSI draft EN 103 329 specifies the CCP concept especially for the usage in the spectrum of 5 725 MHz to 5 875 MHz under consideration for the use by Wireless Industrial Automation (WIA).
- IEC 62657-x will specify the CCP behaviour.

# Concept of Central Coordination Point

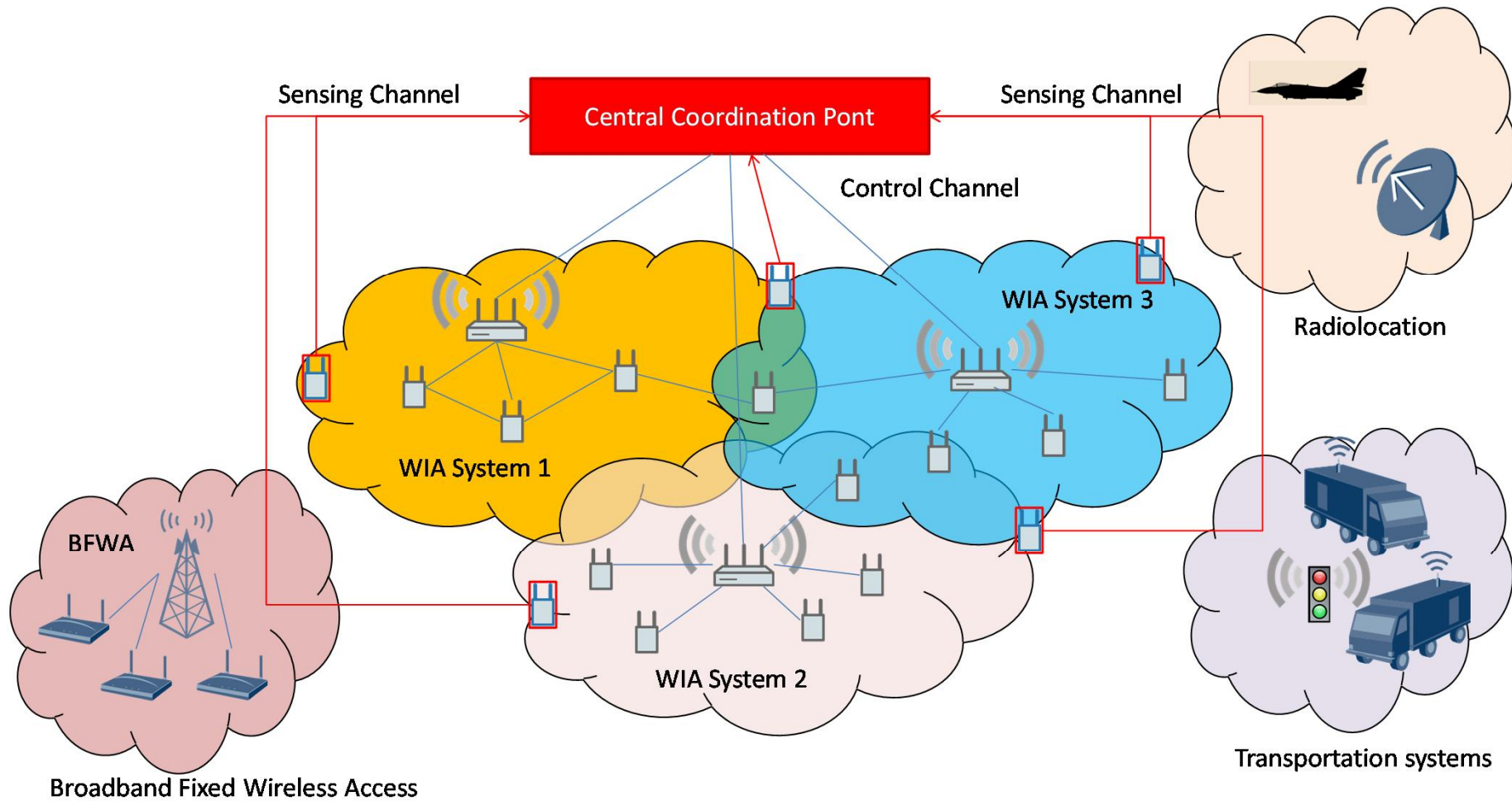
- Coordinate between multiple devices and/or multiple wireless networks with respect to bandwidth, time and space instead of using mitigation techniques individually per radio device

# Concept of Central Coordination Point

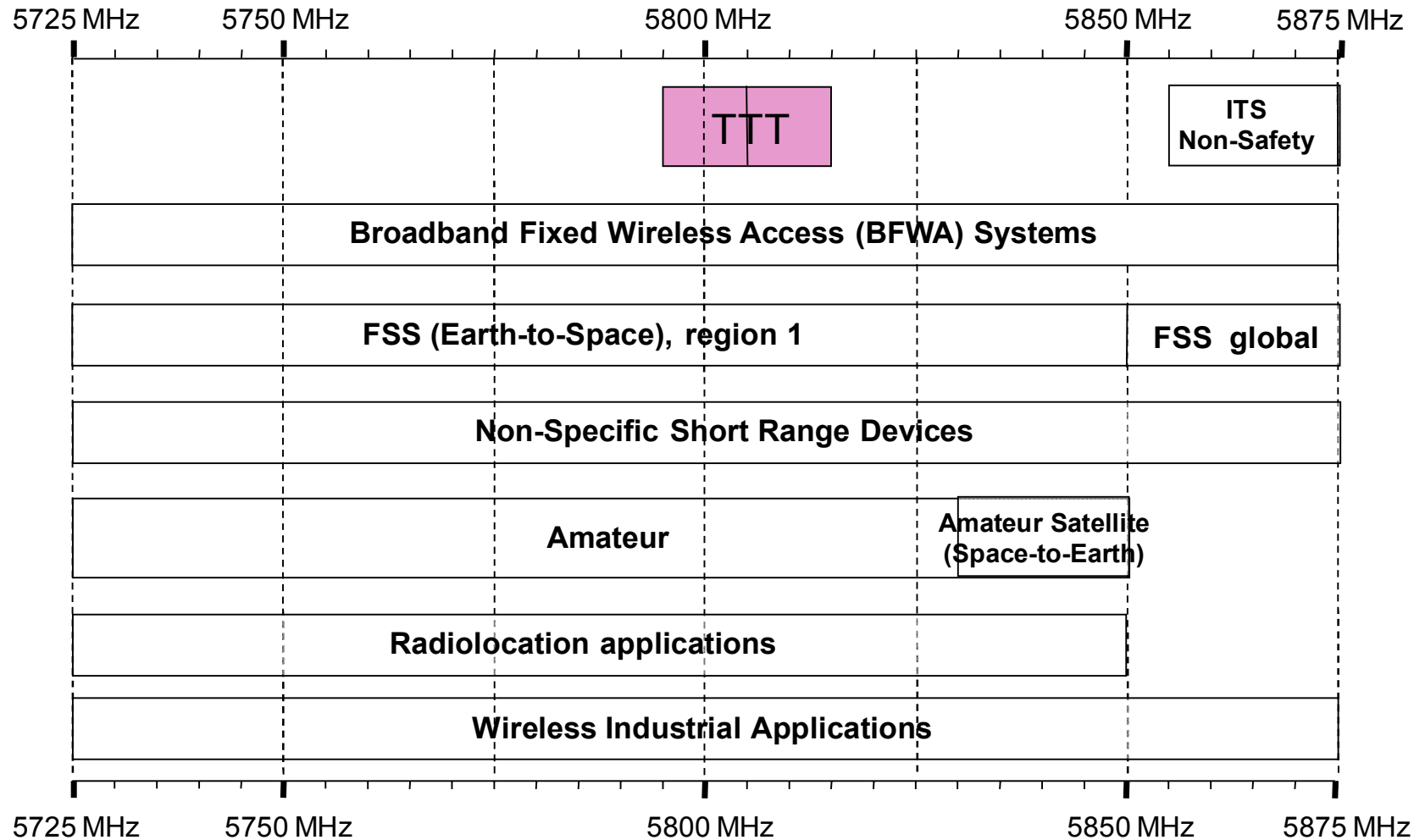
CCP shall fulfil the following basic requirements:

- Support of spectrum coordination mechanisms to provide coexistence between different systems and services in the same frequency range, with the aim of:
  - Protection of incumbent radio systems (e.g. Radiolocation, BFWA, ITS).
  - Avoidance of harmful interferences.
- Support of mechanisms for automatically spectrum allocation and spectrum access, with the aim of:
  - Recognition of free and occupied spectrum.
  - Detection and classification of incumbent radio systems and services.
- Support mechanisms for continuous surveillance of the frequency spectrum condition.

# CCP concept for sharing with other incumbent services and applications



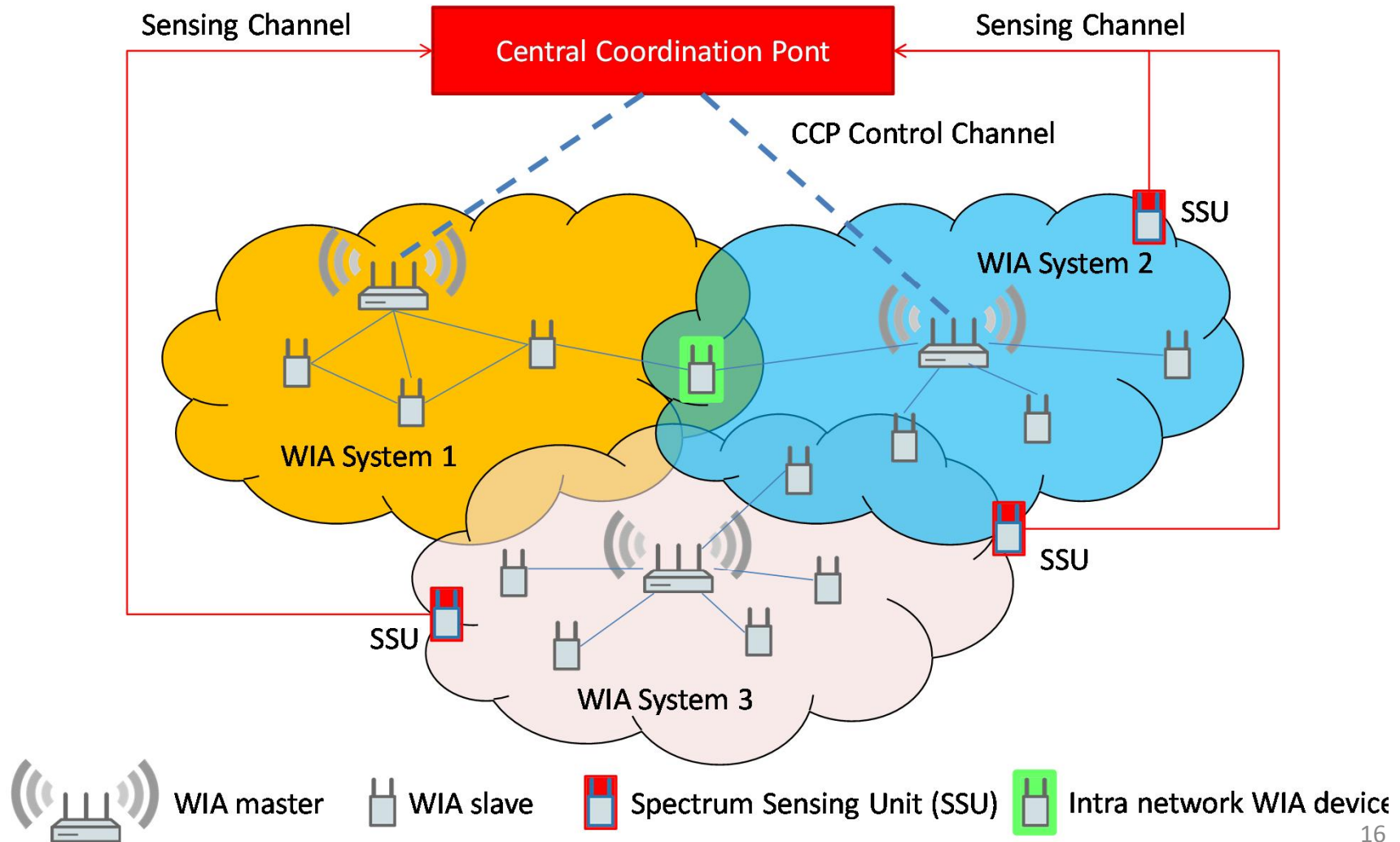
# Incumbent services and applications in the 5,8 GHz WIA



# Parameters of incumbent services and applications

Incumbent service application	Frequency band [MHz]	Type	Application characteristic	Transmit power [eirp]
Radiolocation	5725 – 5850	Defence	Dynamic in time and location	25 – 2800 kW
BFWA	5725 – 5875	Fixed Service	Static	4 W
TTT	5795 – 5815	Transport and Traffic Telematics	Static	2 W – 8 W
ITS non-safety	5855 – 5875	Transportation	Dynamic in time	1 mW – 200 mW

# CCP concept for intra-system coexistence





# CCP communication with intra-system devices

- CCP shall communicate with network access points or with individual wireless devices by means of one or more communication channels and protocols.
- Support of different radio technologies.
- Support of interface for interoperability.
- Support of interface for coordination.