

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: [Coexistence, Interoperability and Other Terms]

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Re: [Coexistence, Interoperability and Other Terms IEEE 802.15-99/134r1]

Abstract: [This presentation continues where the previous contribution “left-off”, trying to reach agreement on a definition of coexistence and the performance metrics to define coexistence. This is a presentation of the contents of contribution IEEE802.15-99/114r1. Please refer to it for details]

Purpose: [Agree to finer definitions on coexistence, Define performance criteria to evaluate the protocols/applications, and Define the “level of performance” where systems are defined to coexist]

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Coexistence, Interoperability and Other Terms

An attempt to quantify
Coexistence/Significantly Impact

Coexistence, Interoperability and Other Terms

- Further clarifications of definitions
- Related terms
- Discussion of terms
- Analogy
- Application of terms
- Proposals

Coexistence and Interoperability

- Coexistence
- Multiple wireless devices are said to “coexist” if they can be **collocated** without **significantly impacting** the performance of any of these devices.
- The ability of one system to perform a task in a given shared environment where other systems may or may not be using the same set of rules.

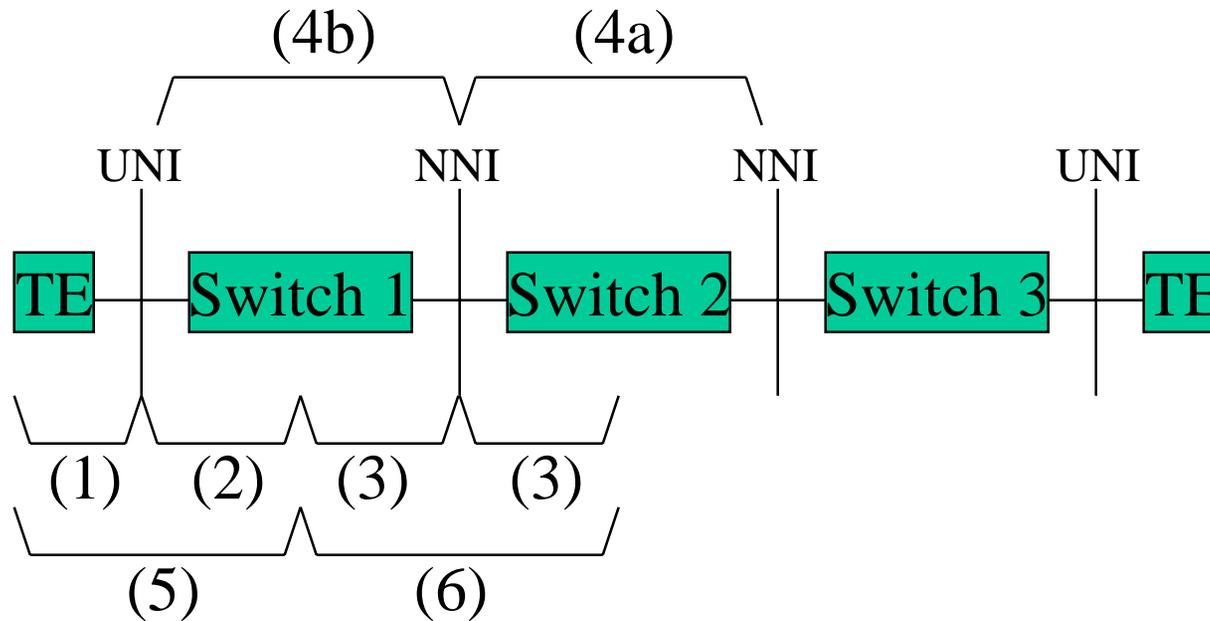
Coexistence and Interoperability_(continued)

- Interoperate - The ability for two or more systems to exchange information and to mutually use the information that has been exchanged
- Interoperability - The ability for two systems to perform a given task using a single set of rules.

Other Terms

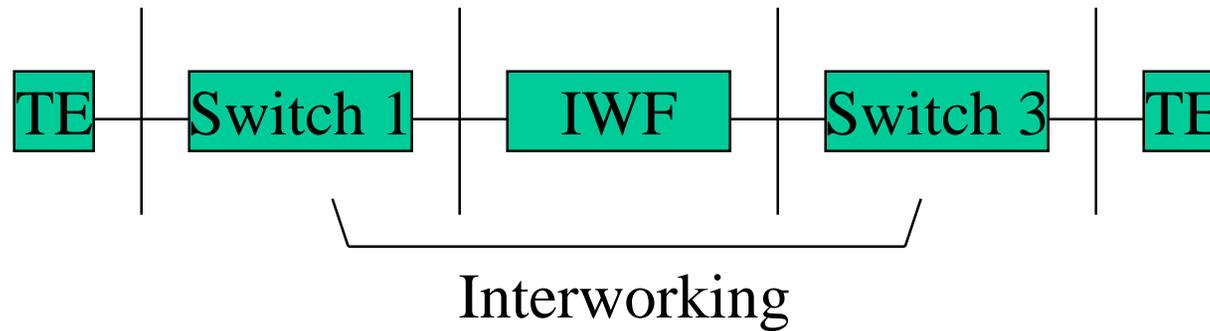
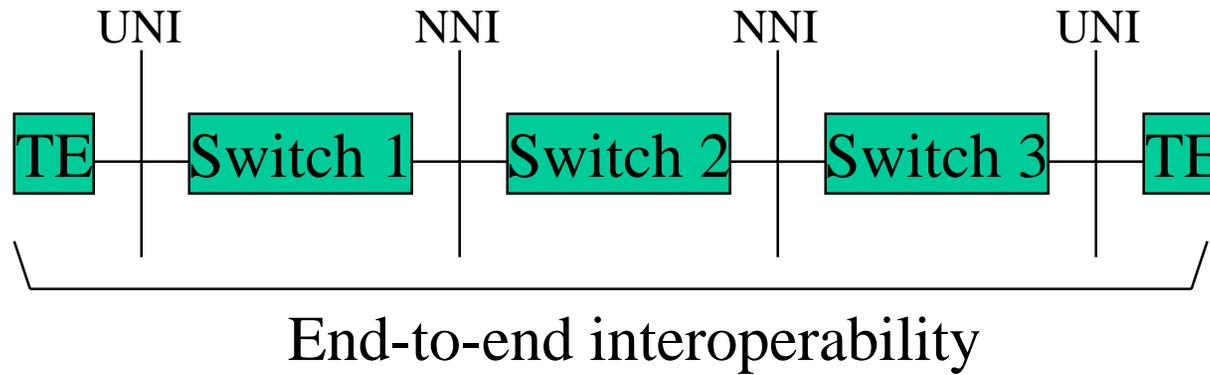
- Conformance/Conformance Testing/Conforming
- Interwork/Interworking
- Operability
- Performance/Performance Testing
- IUT, SUT, repeatability, system

Discussion



- 1 Conformance Testing (User side of UNI)
- 2 Conformance Testing (Network side of UNI)
- 3 Conformance Testing of NNI (symmetrical)
- 4a Operability
- 4b Interworking (UNI to NNI)
- 5 Interoperability of TE and Switch 1
- 6 Interoperability of Switch 1 and Switch 2

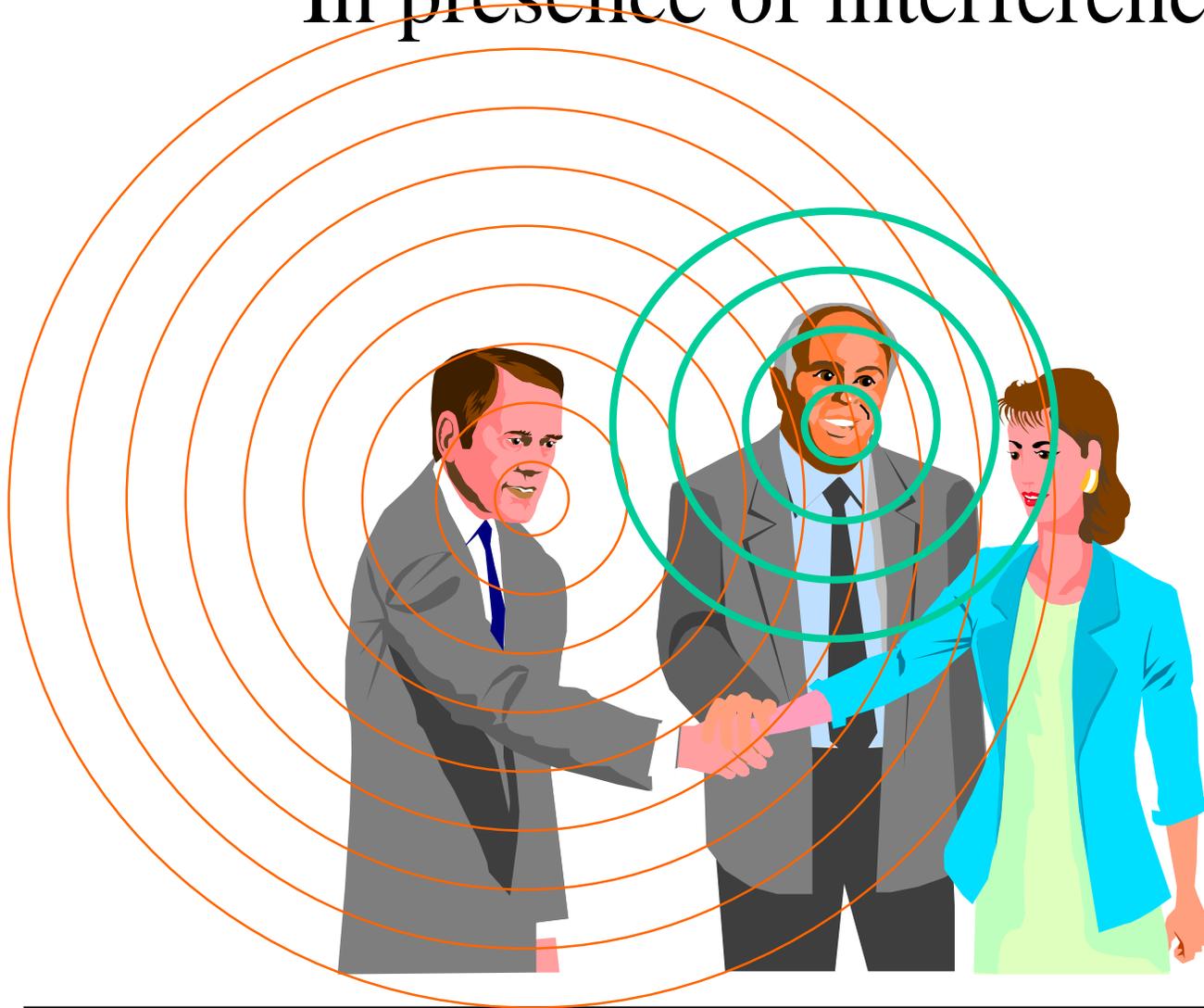
Interoperability



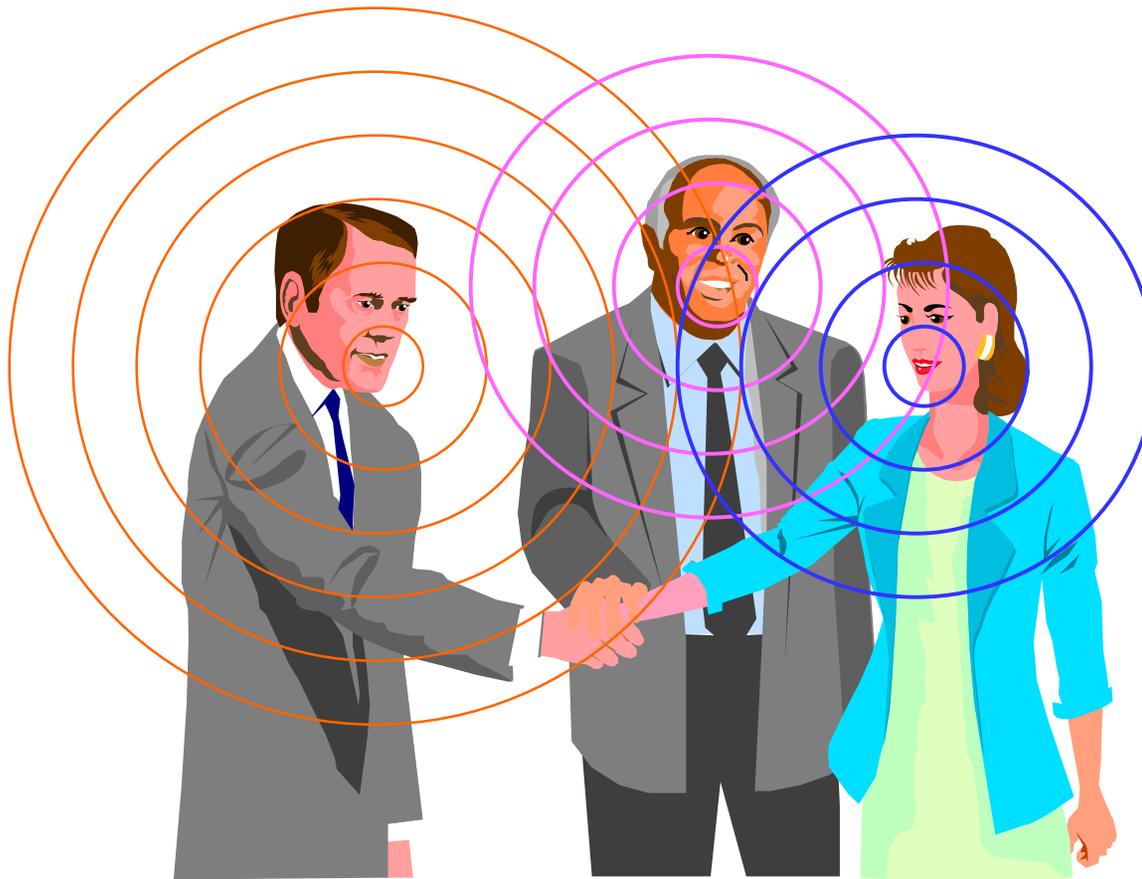
Analogy (Speech via air)



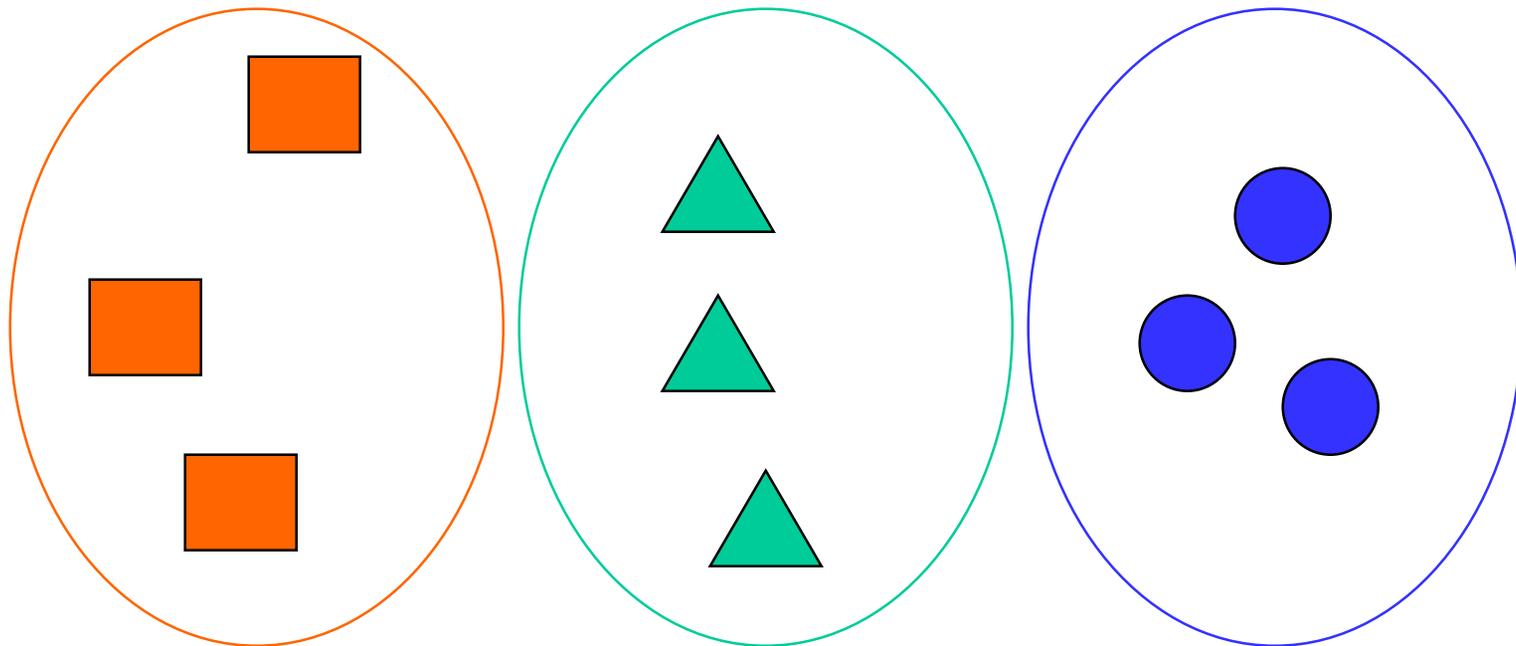
In presence of interference



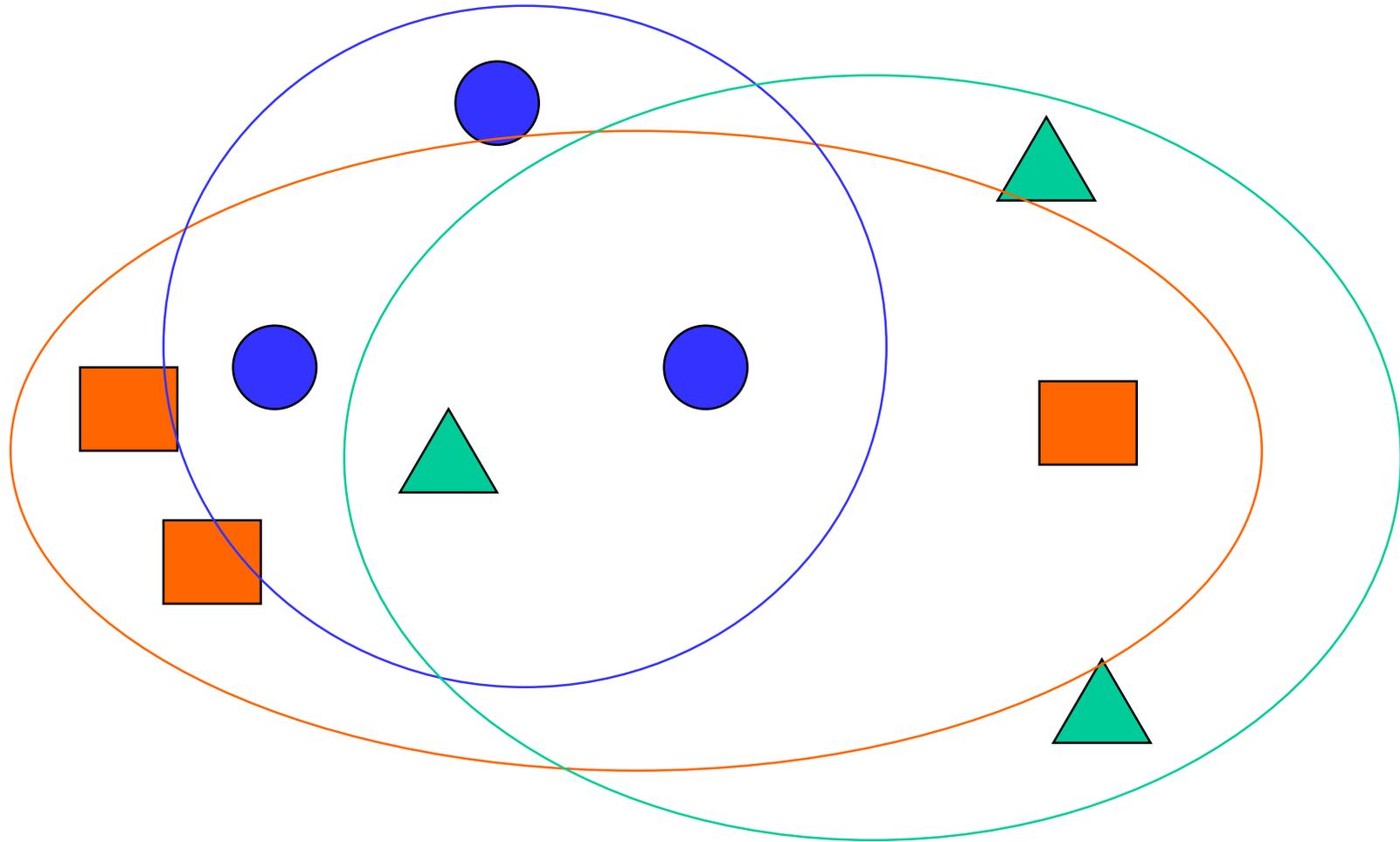
Translator



Application (normal environment)



Application (coexistence environment)



Proposals

- Agree to finer definitions on coexistence and interoperability.
- Define performance criteria to evaluate the protocols/applications.
- Define the “level of performance” where systems are defined to coexist.

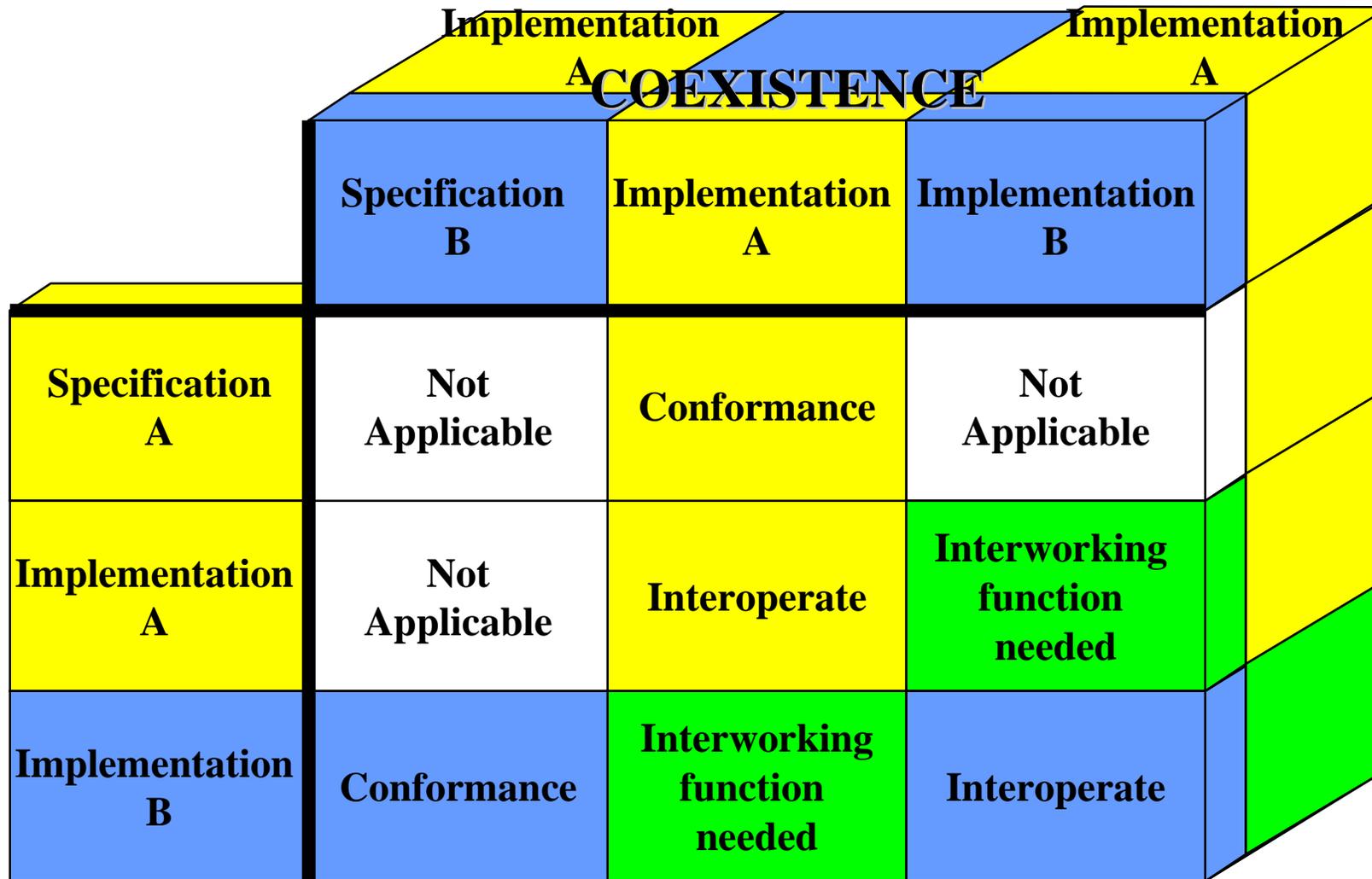
Issues from Prior Presentations

- Definition did not specifically call-out that both systems had to apply the definition.
- Significantly impact is a useless term. A quantity must be specified.
- Collocation is not an item of concern, it is the fact that devices are sharing the radio frequency band, not that they are in the same physical space.

Revised Definition

- **Coexistence** - The ability of one system to perform a task in a given shared environment where other systems may or may not be using the same set of rules.

Model of Terms



Other Definitions

- **Conformance** - The ability of a system to follow a single set of rules.
- **Interoperable** - The ability of two systems to perform a given task using a single set of rules.
- **Interworking** - The ability of two systems to perform a task given that each system implements a different set of rules.
- **Operable** - The ability of a system to perform the functions as expected.