Where and When Do We Need Interoperability?

DOE SSL Program Connected Lighting Meeting

November 16, 2015

Michael Poplawski, PNNL

What is interoperability?
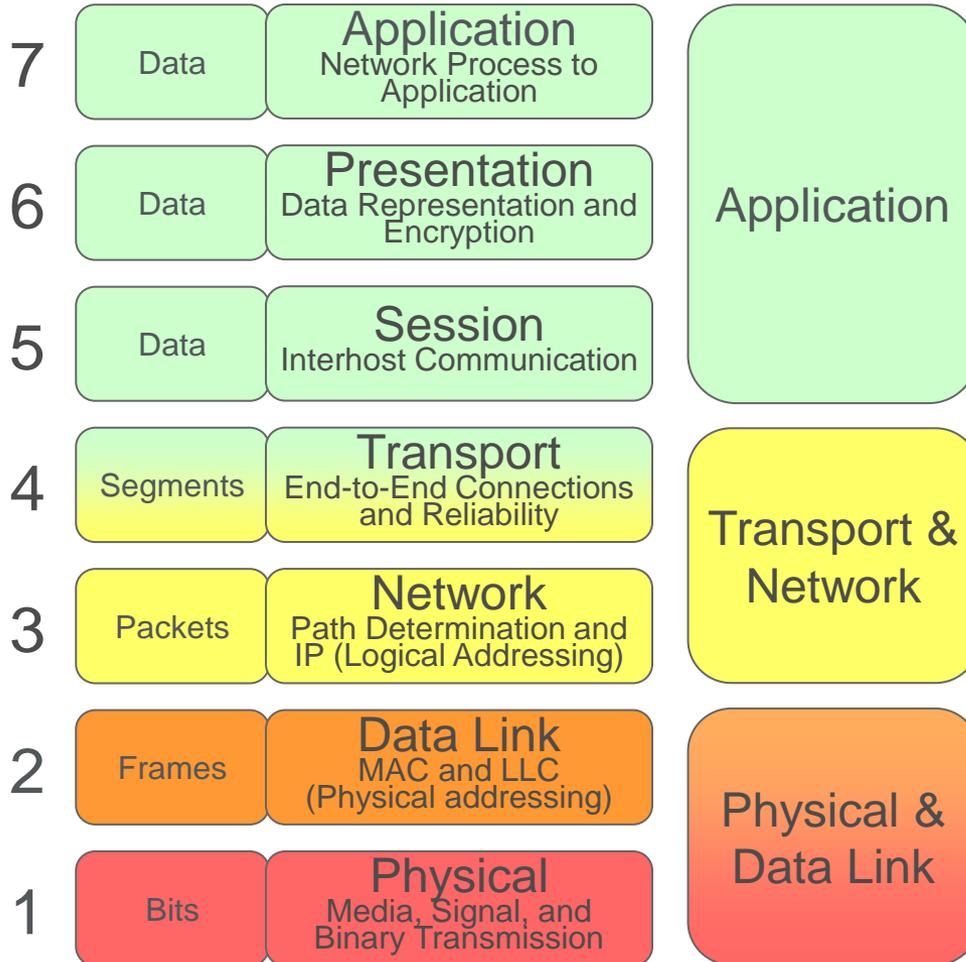
Compatibility: The ability of two or more devices, applications, networks, or systems to coexist in the same physical environment – that is, operate without corrupting, interfering with, or hindering the operation of the other entity.

Interoperability: The ability of two or more devices, applications, networks, or systems to work together, and (more specifically) to reliably and securely exchange and readily use data with a common shared meaning.
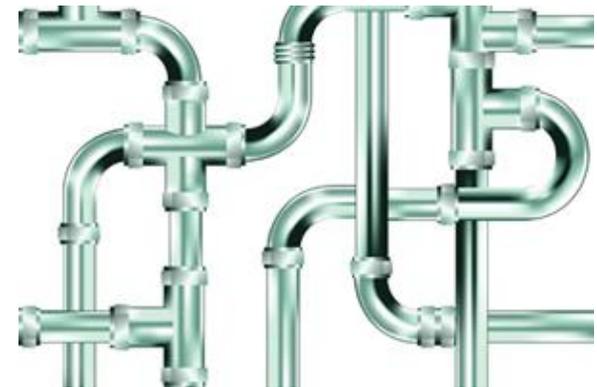
Interchangeability: The ability of two or more devices, applications, networks, or systems to be physically exchanged for each other and provide a defined level of identical operation without additional configuration.

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There are many levels of interoperability

OSI Model

#			
7	Data	**Application** Network Process to Application	**Application**
6	Data	**Presentation** Data Representation and Encryption	
5	Data	**Session** Interhost Communication	
4	Segments	**Transport** End-to-End Connections and Reliability	**Transport & Network**
3	Packets	**Network** Path Determination and IP (Logical Addressing)	
2	Frames	**Data Link** MAC and LLC (Physical addressing)	**Physical & Data Link**
1	Bits	**Physical** Media, Signal, and Binary Transmission	

http://en.wikipedia.org/wiki/OSI_model

20_kWh 21_kHh
1ab 43c ac5 789
[0010][1001][0101][0101]
00101001010101

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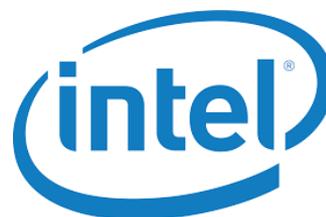# There are many efforts focused on interoperability

Roy
Harvey

Ivan
Judson

Remy
Marcotorchino

David
McCall

On to the panelists…

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