Open Line System, the concepts

Kurosh Bozorgebrahimi, UNINETT and JRA1-T1

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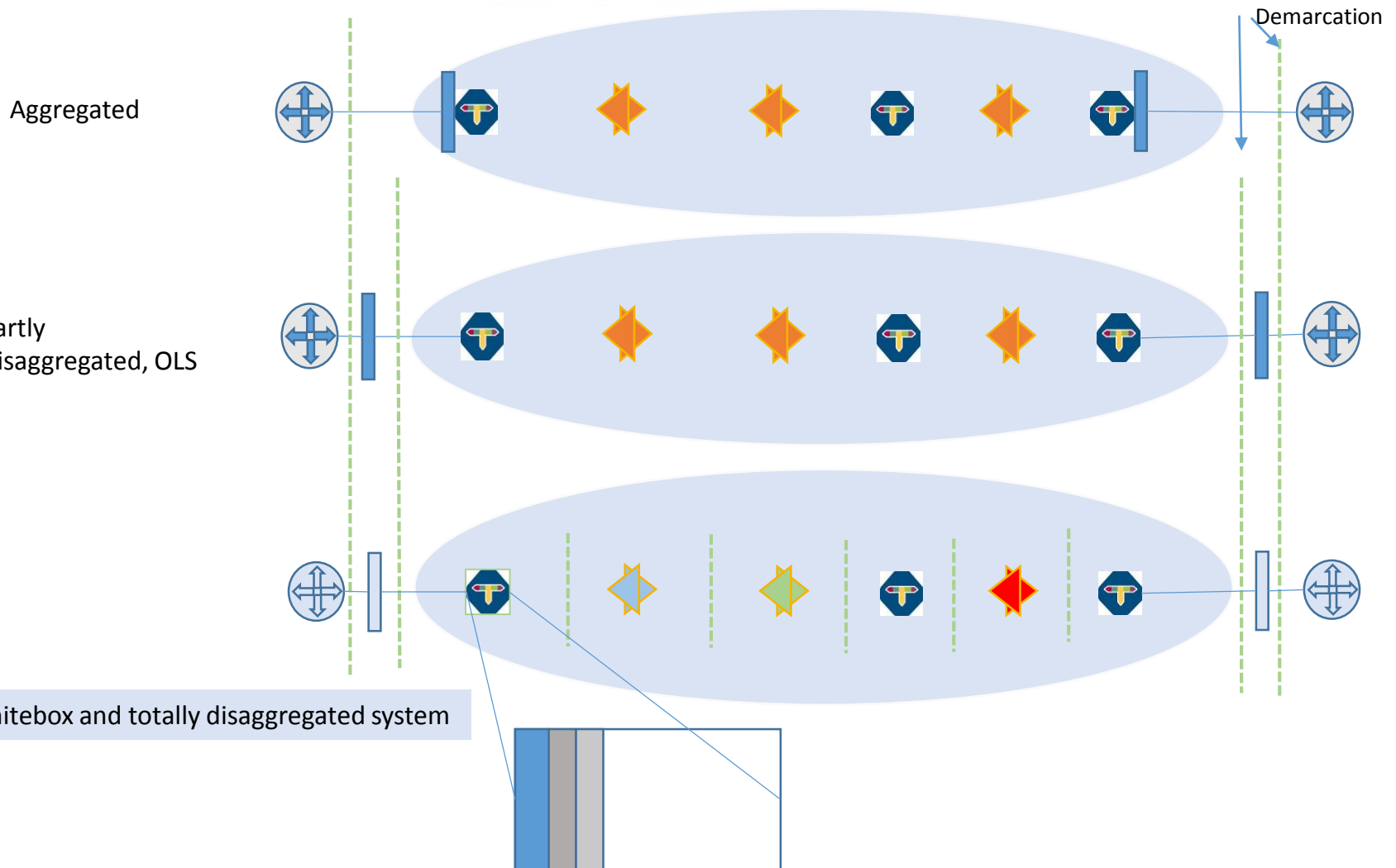
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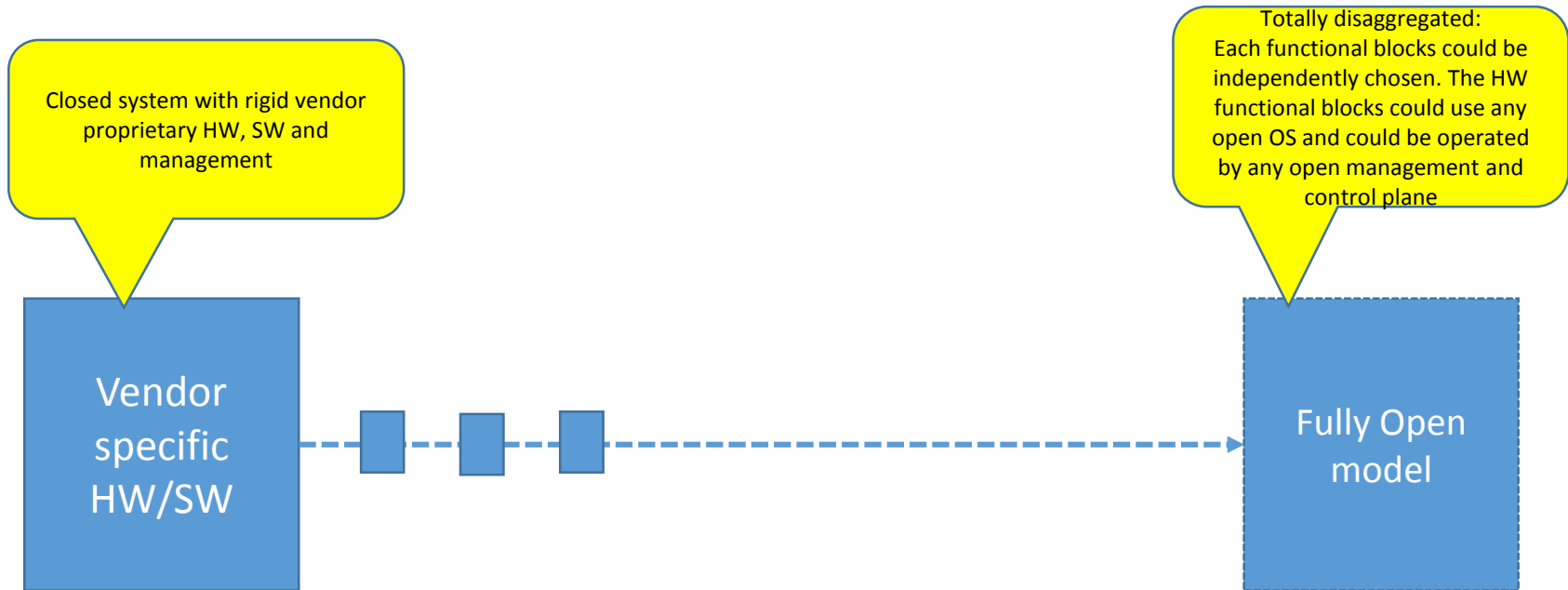
What is whitebox and open line system?
(from L0-L1 point of view)

- Open Line system: Separation of the line system (Mux/Demux, ROADMs, amplifiers,…) from the transponders (3R functionality).
    - A Fully Reconfigurable, Coherent Optimized, Line System which can carry any wavelength service regardless of modulation format, data rate, or vendor and allows for these wavelength services to be created / modified programmatically (Agile Open Line System, Rodney Dellinger, ALU, ECOC 2014)

- DCI transmission equipment: high performance compact transponder unit

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- White box: Separating network equipment in functional independent component which could be independently optimized and independently deployed
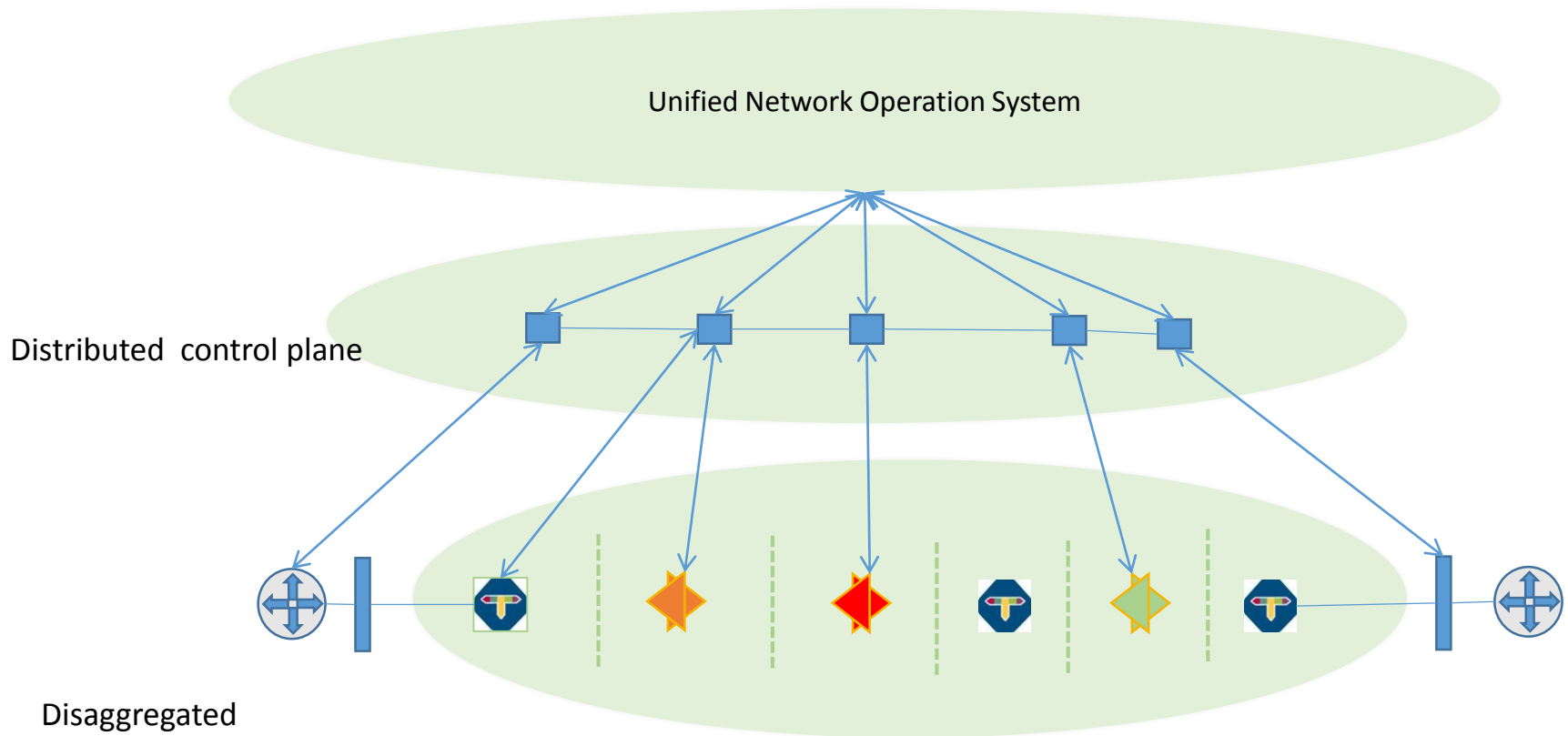
Disaggregation in data plane

Demarcation

Aggregated

Partly
Disaggregated, OLS

Whitebox and totally disaggregated system

Degree of openness

Closed system with rigid vendor proprietary HW, SW and management

Totally disaggregated: Each functional blocks could be independently chosen. The HW functional blocks could use any open OS and could be operated by any open management and control plane
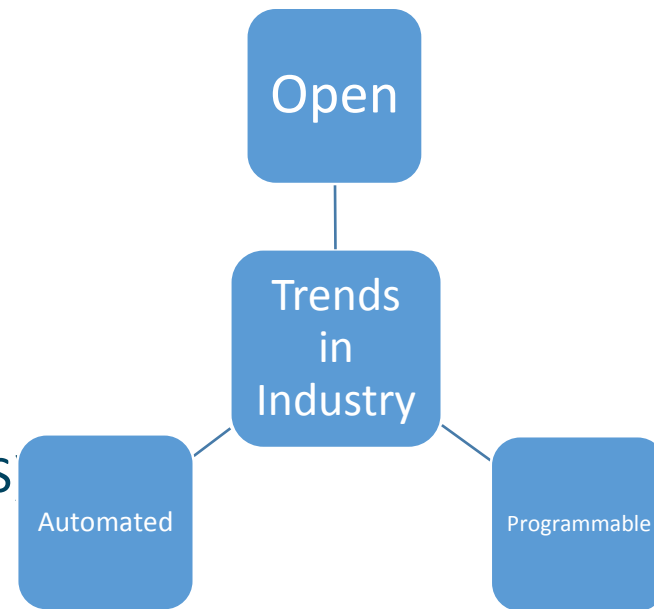
Vendor specific HW/SW

Fully Open model

- We have a long way to go from a totally closed and vendor specific system to a total disaggregated system.

- There will be different degree of openness and the question is where you as operator would like to be.
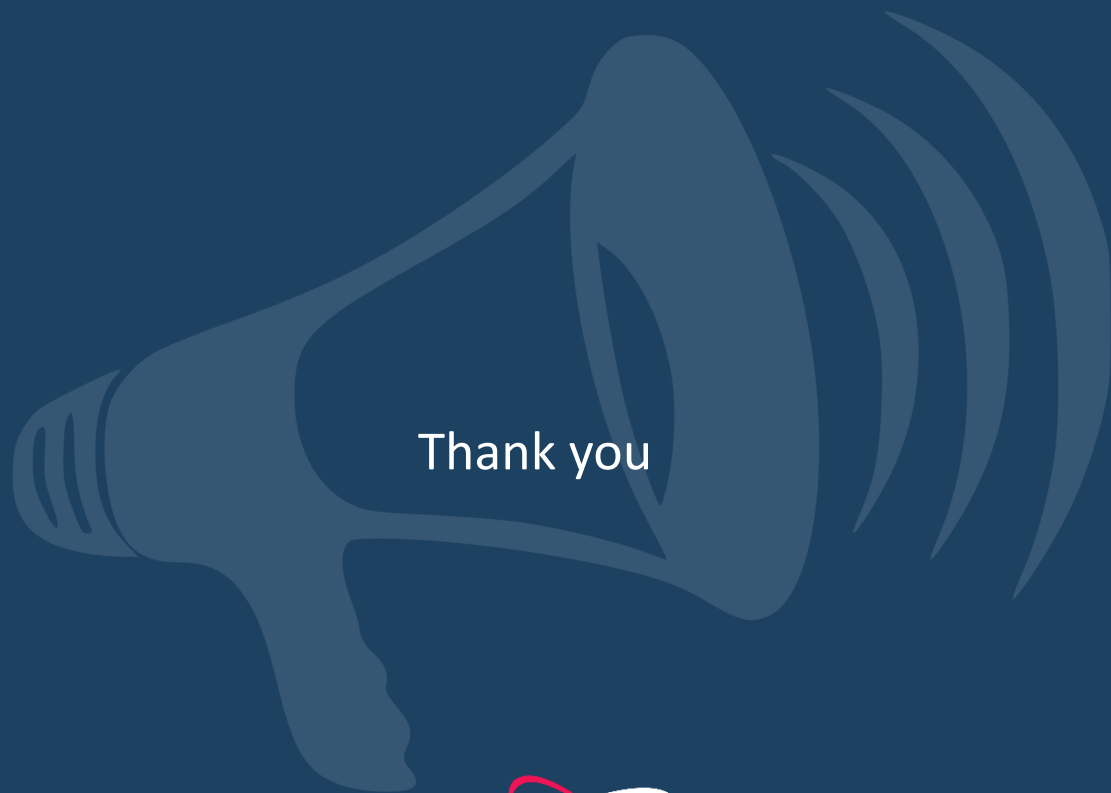
control and management plane

Industry Initiatives (Data, Control and Management Plane)

- Telecom Infra Project (Facebook)

- Open ROADM (AT&T)

- Terastream (Deutsche Telekom)

- OIF

- Open Networking Foundation

- IETF

- ….

- Open Network Operating System (ONOS

- Open Daylight

- OpenConfig

Open

Trends in Industry

Automated

Programmable

The Motivation factors are: Interoperability, Efficiency and simplicity

DCI White box market

- Lumentum (ROADM, amplifiers, line system)

- Infinera CX/CX2

- Nokia PSI-2T

- Huawei OSN902

- Coriant Groove G30

- Fujitsu 1FINITY T100/T200

- Ciena Waveserver AI

- ADVA Cloudconnect

- Cisco NCS 1000

- …..

Thank you

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