



The STRAUSS Project

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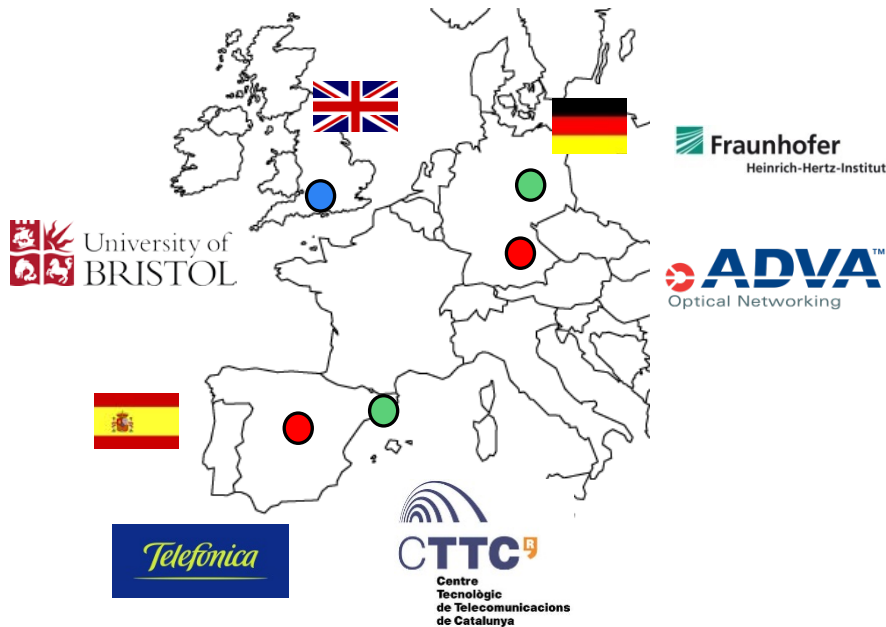
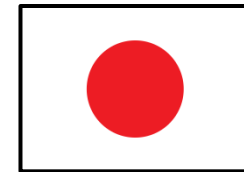
Outline

- * Administrative information
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- * Expected Impact

Administrative Information

- * **Project Name:** Scalable and efficient orchestration of Ethernet services using software-defined and flexible optical networks.
- * **Acronym:** STRAUSS
- * **Call identifier:** FP7-ICT-2013- EU-Japan (Coordinated EU-Japan Call)
- * **Funding scheme:** STREP
- * **EU Project Coordinator:** Dr. Raul Muñoz. Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)
- * **JP Project Coordinator:** Prof. Ken-ichi Kitayama. Osaka University
- * **Duration:** 36 months (1st June 2013 – 31st May 2016)
- * **Total Cost:** € 5.033.882.
- * **EC Contribution:** € 1.498.990.
- * **JP Contribution:** € 2.820.000
- * **Project website:** www.ict-strauss.eu

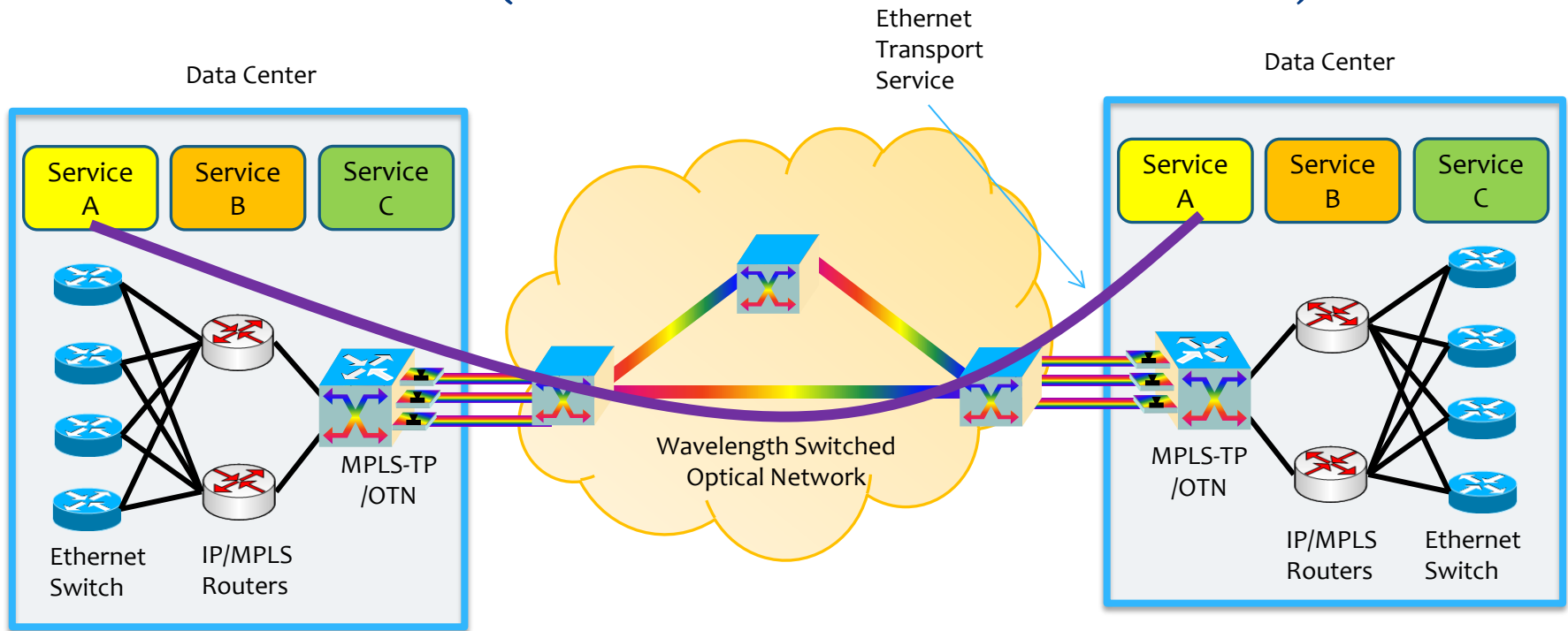
EU and JP Consortia



- Industrial Partners
- Research Centers
- Universities

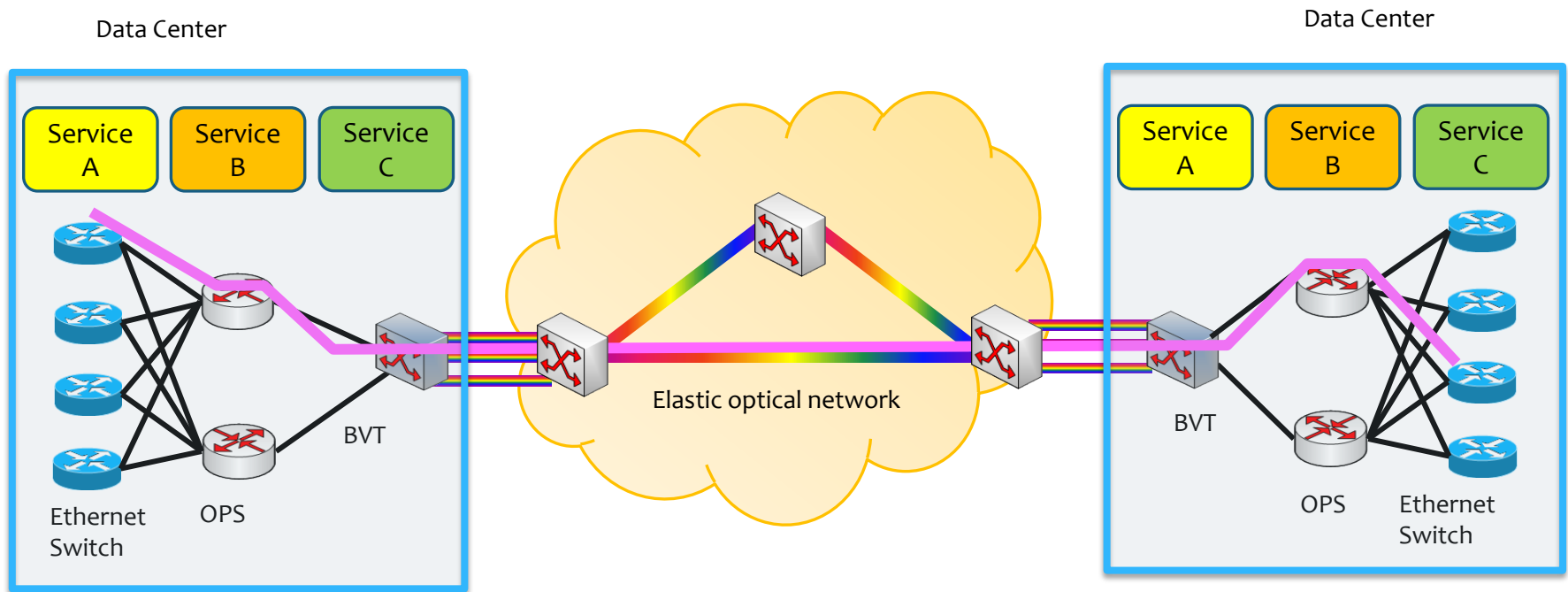
The need for optical Ethernet transport

- * The main driver for the development of efficient transport infrastructures for Ethernet services is the adoption of Ethernet as the technology of choice in data centers (both intra- and inter- data center traffic).



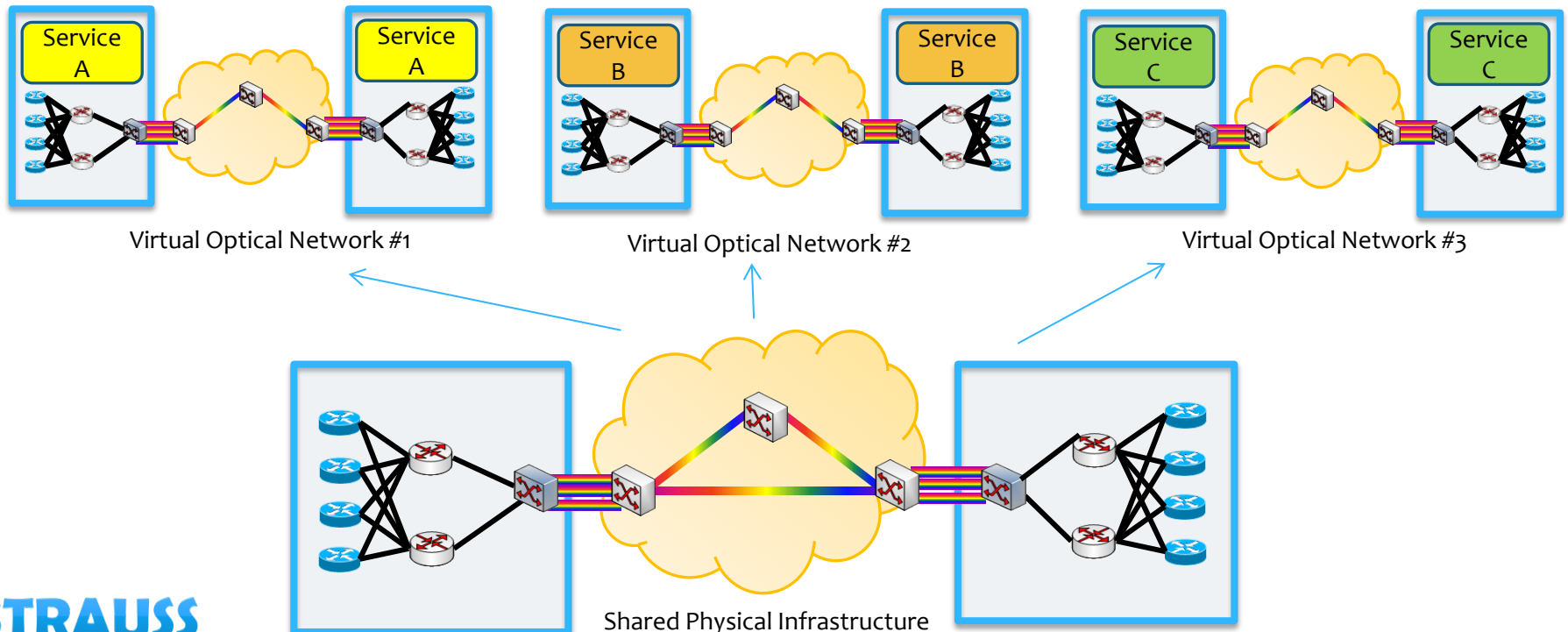
The need for flexible optical networks and OPS for data rates beyond 100 Gbps

- * Fixed-grid DWDM transport networks, electrical packet switching and aggregation technologies are not efficient for data rates beyond 100 Gbps.
- * Elastic optical networks (EON) and optical packet switching (OPS) are key technologies for addressing these issues



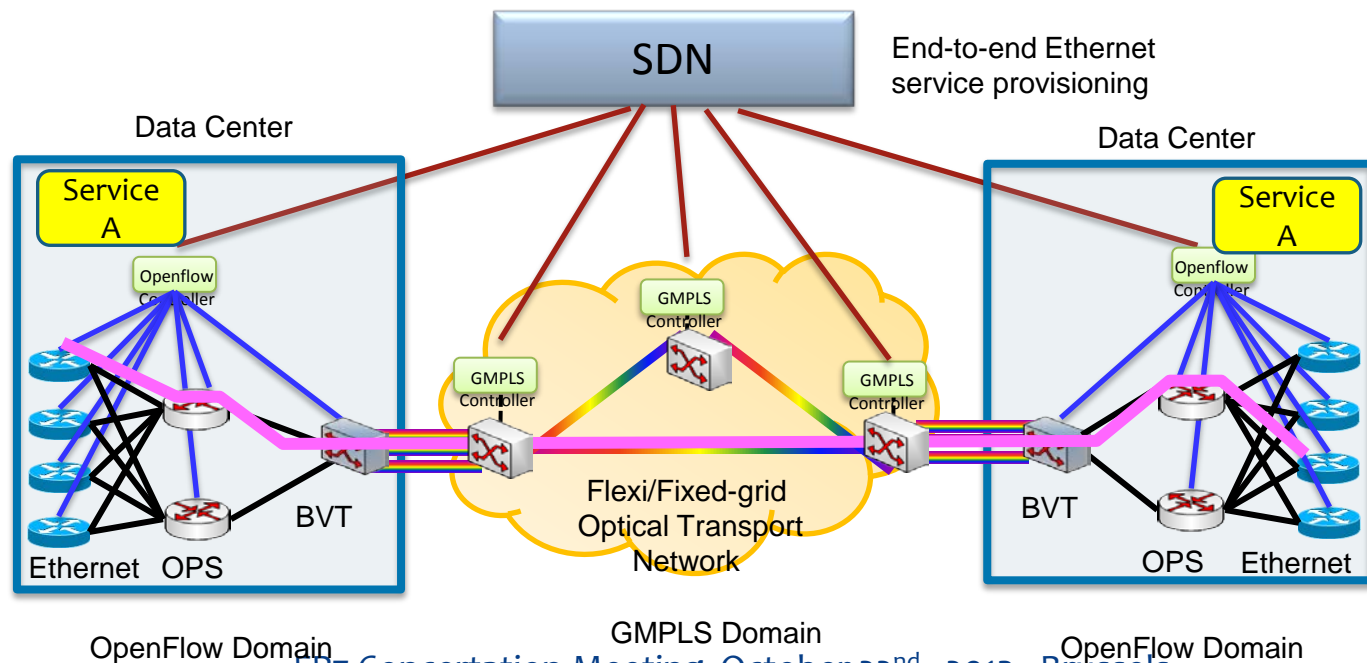
The need for optical network virtualization

- * Each data center service has its own specific QoS and SLA requirements.
- * Network operators require dedicated and application-specific optical networks.
- * Optical network virtualization is a key technology for addressing this issue.

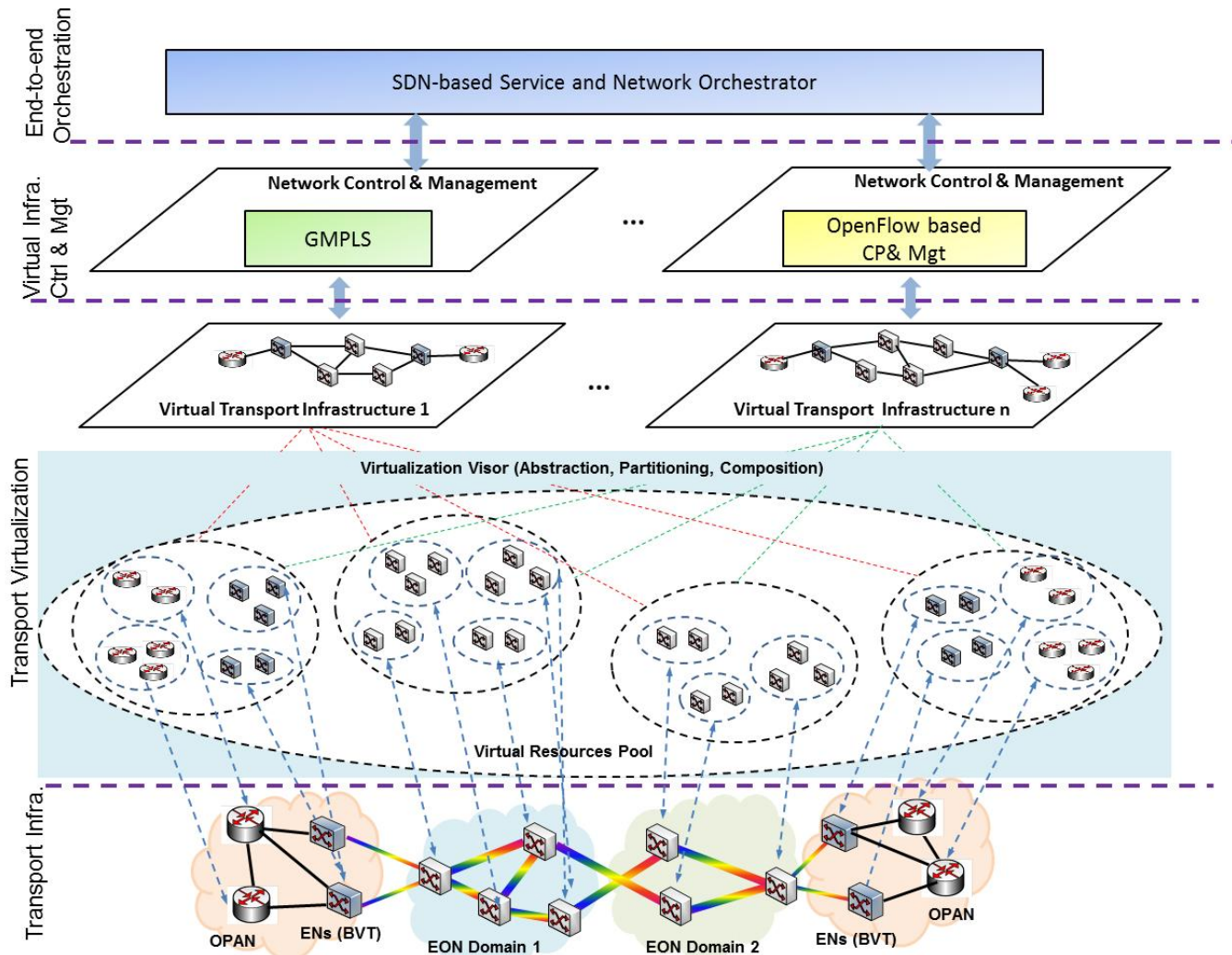


The need for software defined optical network

- * Each requires a control plane (e.g. OpenFlow or GMPLS) for the provisioning of dynamic, adaptive and fault-tolerant network services.
- * A physical infrastructure comprising heterogeneous optical transport and control plane technologies does not naturally interoperate.
- * Software defined Networking (SDN) is a key technology for addressing this issue.



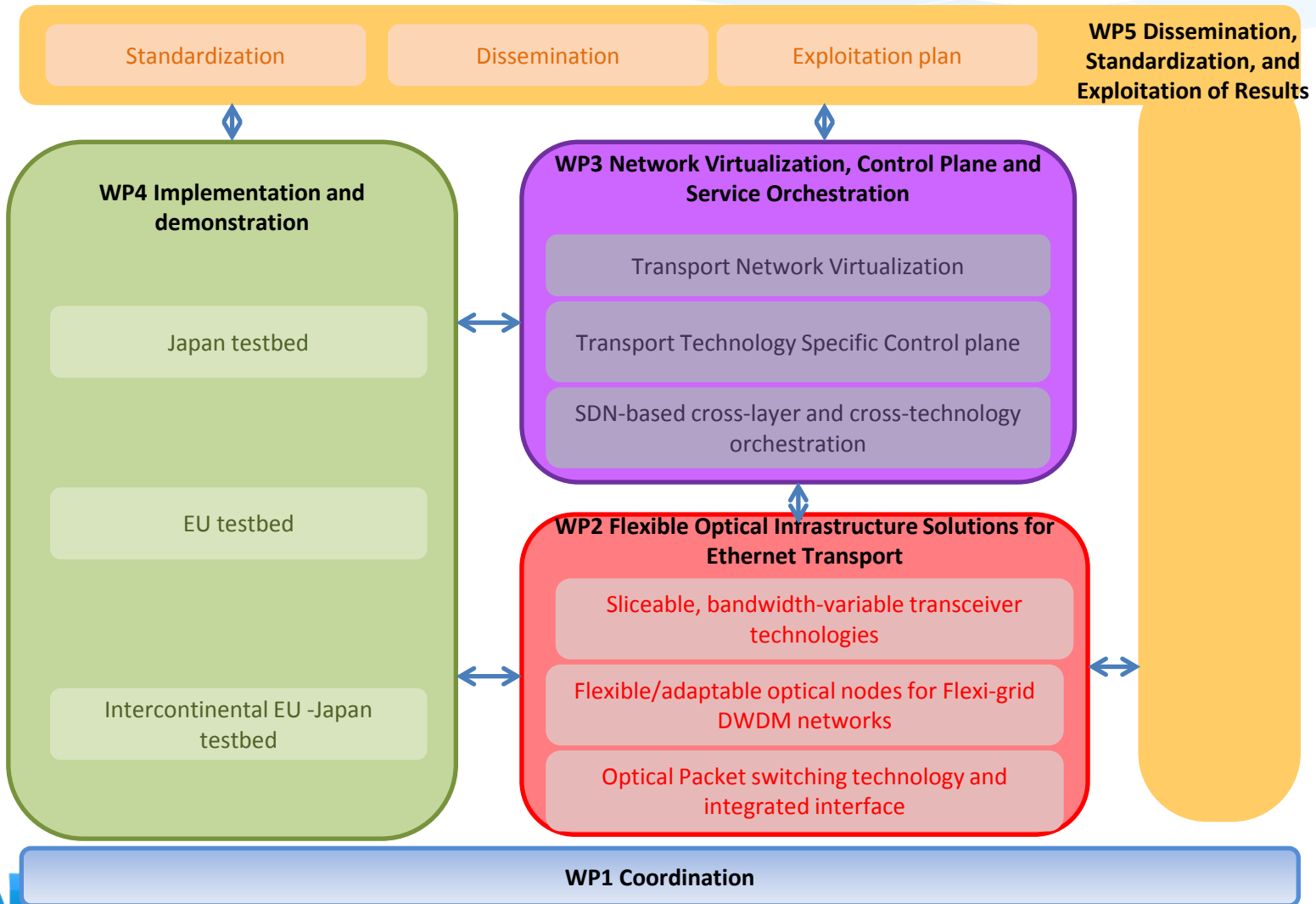
Overall architecture



Project Objectives

- * To investigate cost/energy-efficient solutions for transmission and data plane aspects such as the design and development of sliceable transponders, flexible nodes and the integrated interface between fixed-length, variable-capacity OPS and flexible OCS switching nodes.
- * To identify the requirements, use cases and architectural and functional design of the transport network virtualization.
- * To investigate the OpenFlow protocol extensions and the SDN orchestrator for cross-layer (OPS and flexi-grid OCS) and cross-technology (GMPLS and OpenFlow-controlled) network infrastructures.
- * The integration, experimental validation and demonstration of the implemented systems through both standalone EU and Japan testbeds and intercontinental EU-Japan experimental platform.

WP Overview



Expected outcomes

STRAUSS can;

- * Become a role model of successful ICT EU-Japan research and development cooperation
- * Contribute a future-proof >100G-Ethernet technology to the international standardization bodies such as OIF and IEEE802
- * Help shortening time-to-market of a wide variety of networked applications by offering a new paradigm of optical network virtualization and software defined networks based upon cost/energy-efficient Ethernet transport



Thank you!

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