

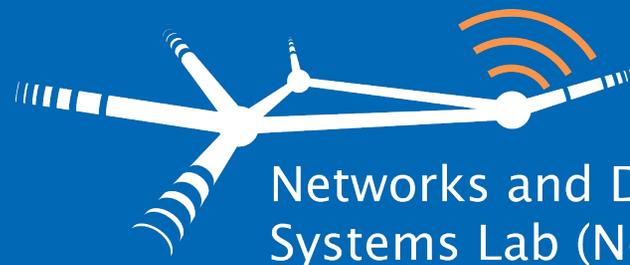


FACULTY OF
COMPUTER SCIENCE

Deployment of SCION over BRIDGES

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SCION



Networks and Distributed
Systems Lab (NetSys)

SCION Next-Generation Internet



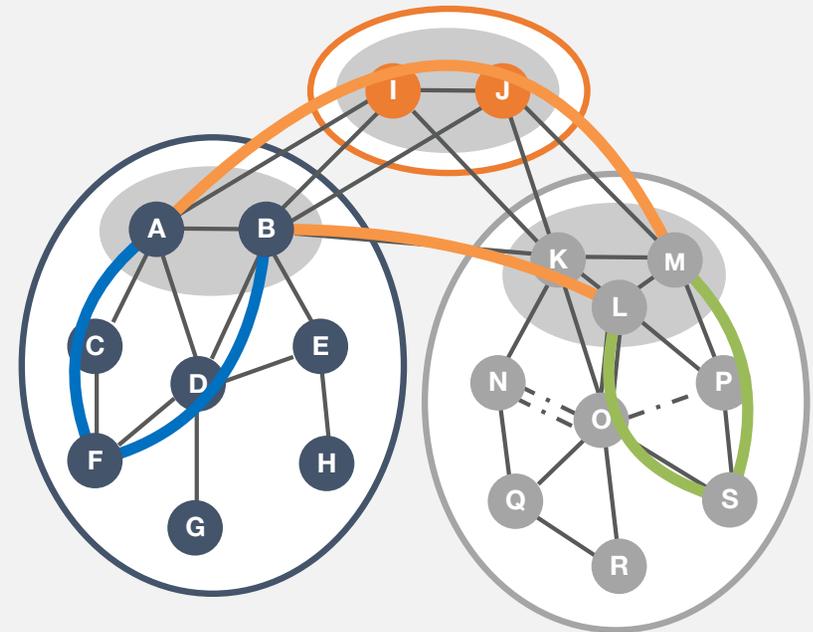
Path-based Network Architecture

Control Plane - Routing

- **Constructs** and **Disseminates Path Segments**

Data Plane - Packet forwarding

- **Combine Path Segments** to Path
 - Packets contain Path
 - Routers forward packets based on Path
- Simple routers, stateless operation



Packet P1

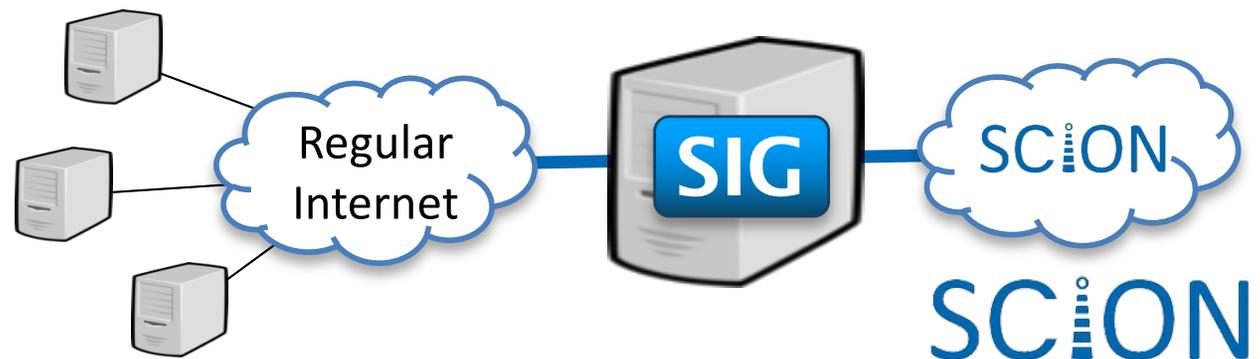
- F → C → A
- A → I → J → M
- M → P → S

Packet P2

- F → D → B
- B → K → L
- L → O → S

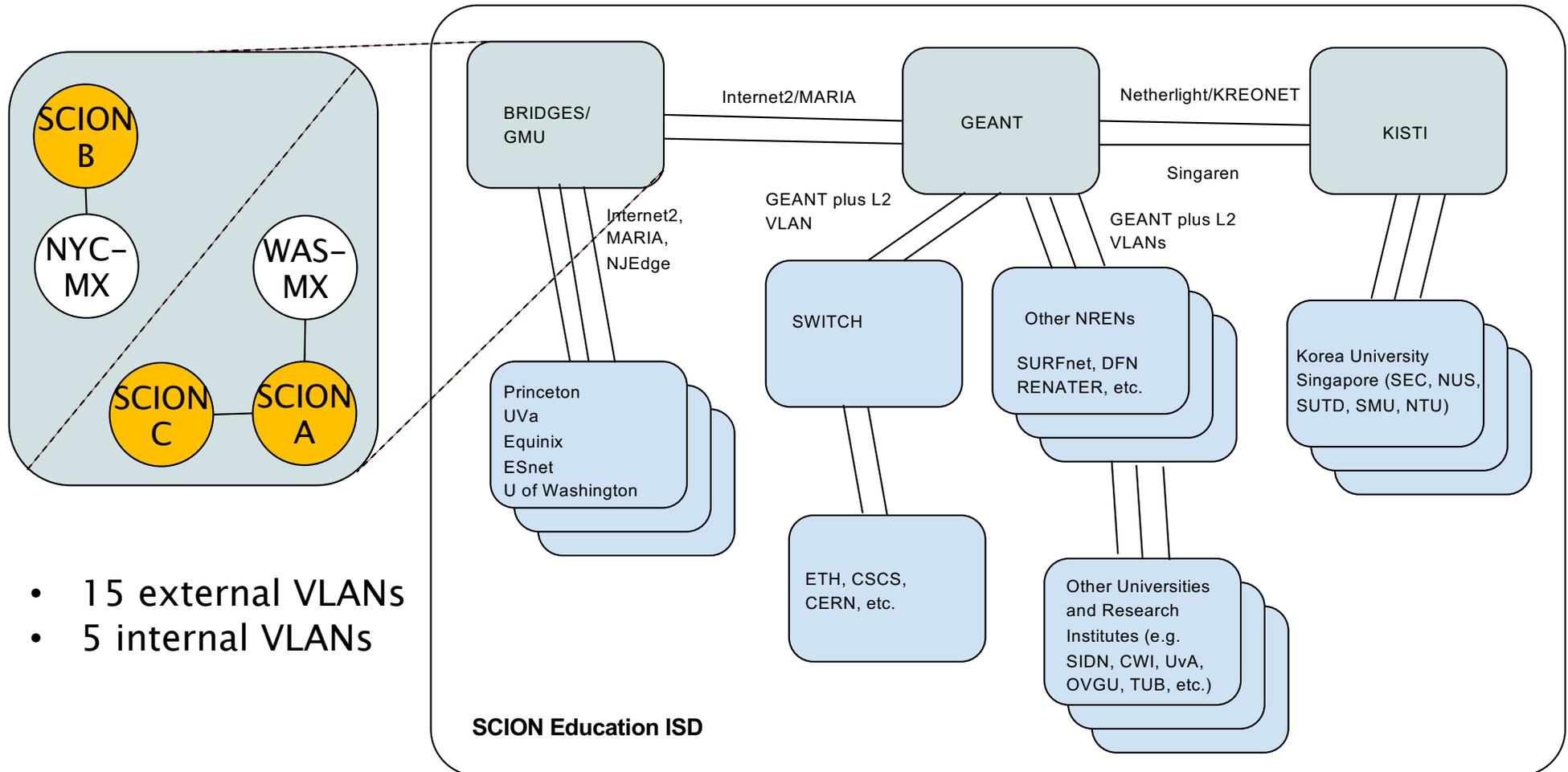
SCION Access for Universities and Research Institutes

- ❖ Connect universities and research institutes with SCION
 - Participate in research on emerging topics of **path-aware networking and multipath communication**
 - Not possible on today's single-path Internet
 - Researchers at early participant institutions obtain **competitive advantage** by leveraging the SCION deployment
 - Software packages and setup instructions are provided for different platforms to enable use of SCION native application
 - **SCION IP Gateway (SIG)** enables use of regular IP applications
 - Using SCION for users not involved in network research is no harder than using regular Internet services



SCION Education ISD Today

- ❖ Connect universities and research institutes *native* with SCION
 - All links are L2 based (i.e. BGP free)



- 15 external VLANs
- 5 internal VLANs

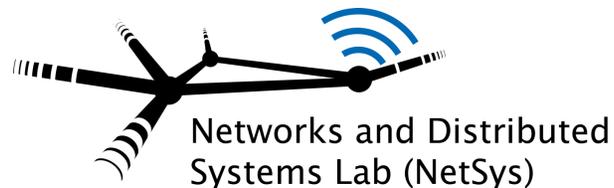
VLANs

AS	VLAN range	Path via
BRIDGES	100,101,105 102,103	Internal Hairpin via Paris
UVa	1600-1609	MARIA
Princeton	1610-1619	MARIA-Internet2-NJEdge
GEANT	1620-1629	MARIA-Internet2
Equinix	205	Cross-connect

Thank you for your attention! Questions?

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<https://www.netsys.ovgu.de>



SCION