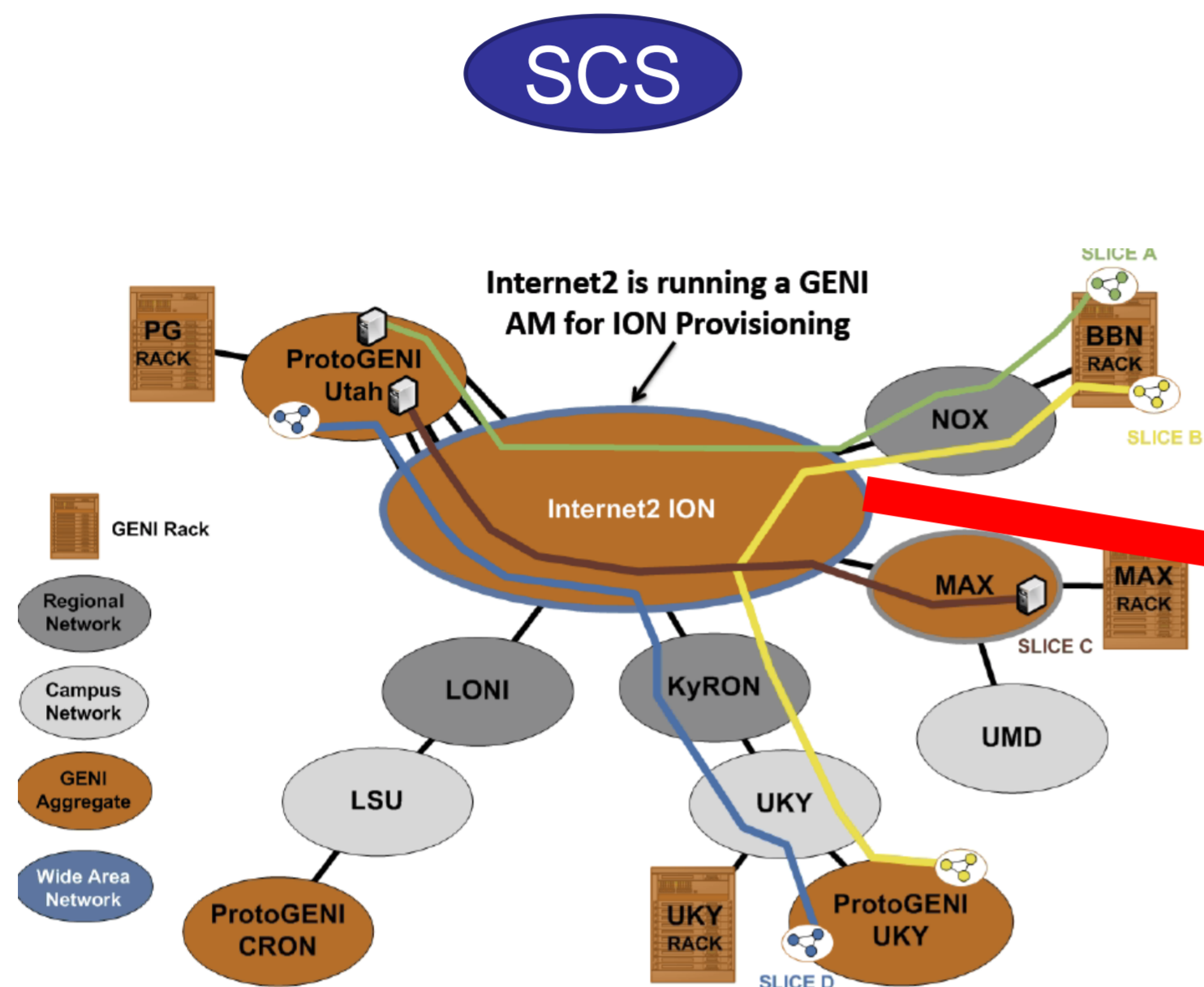# FIRE – GENI SDX 1.0

Brecht Vermeulen[1], Wim Van de Meerssche[1], Thijs Walcarius[1], Rob Ricci[2], Tom Lehman, Xi Yang[3]

[1]iMinds/Ghent University, [2]University of Utah, [3]UMD

brecht.vermeulen@iminds.be

GENI Federation

FIRE Federation

Leveraging Protogeni as SDX

We have developed a prototype of a FIRE-GENI SDX (software defined exchange) based on the Protogeni/Emulab testbed software.

What we needed:
- VLAN connections
- VLAN translation
- SDN functionality
- AM API
- Bandwidth management

Protogeni/emulab does solve 3 of these out of the box, and we developed the VLAN translation and SDN functionality as shown below.

If an RSpec comes in with VLAN translation needs or with an openflow controller attached to the link, we swap in an extra node which has this functionality, e.g. based on openflow or later on by click software router.

Example setup and stitching nightly testing

iMinds
Internet Based Communication Networks and Services, IBCN • www.ibcn.intec.ugent.be
Department of Information Technology • Gaston Crommenlaan 8 bus 201, 9050 Gent, Belgium
INTEC