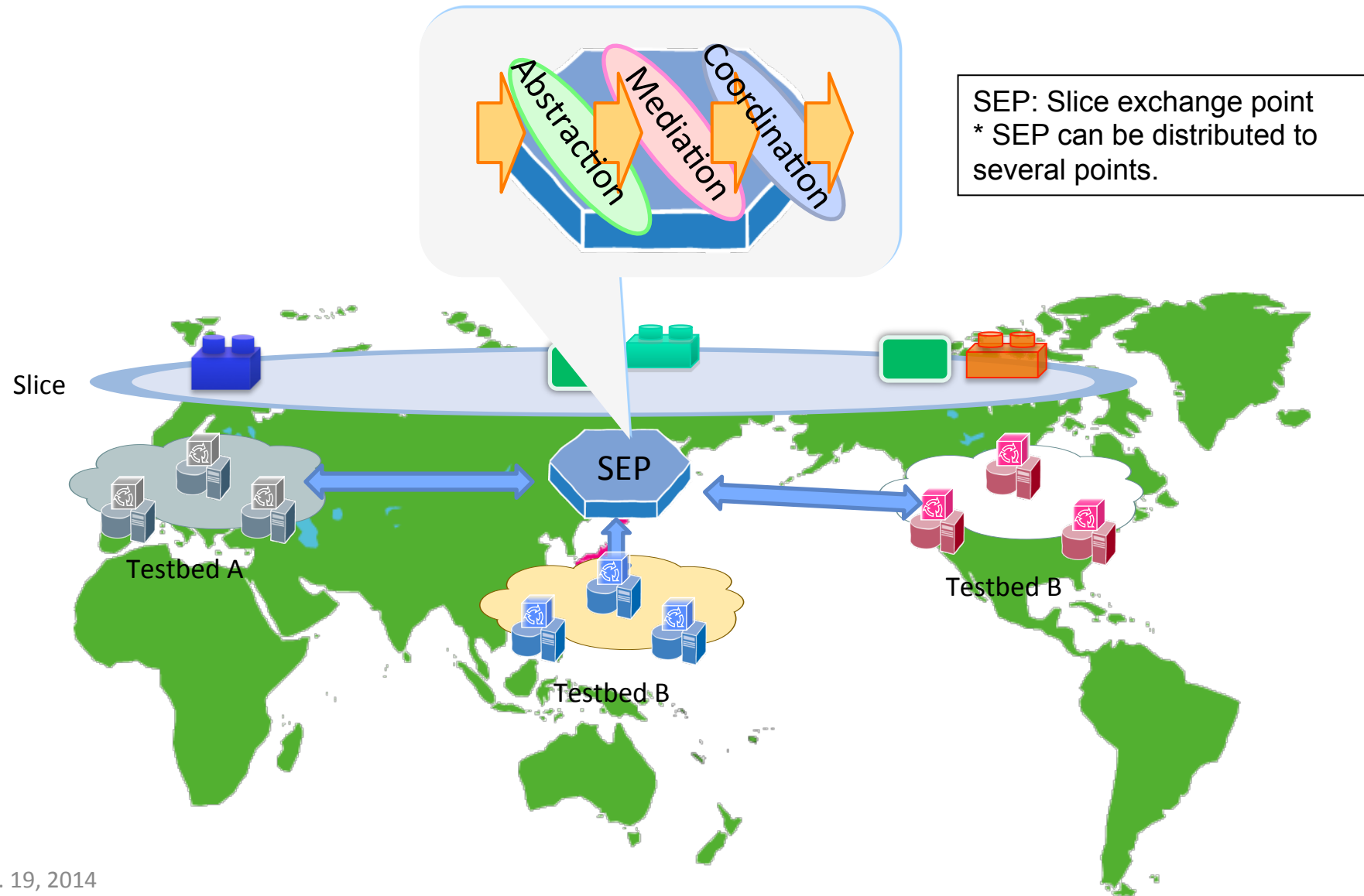


# Slice Exchange Point and Common API v2.0

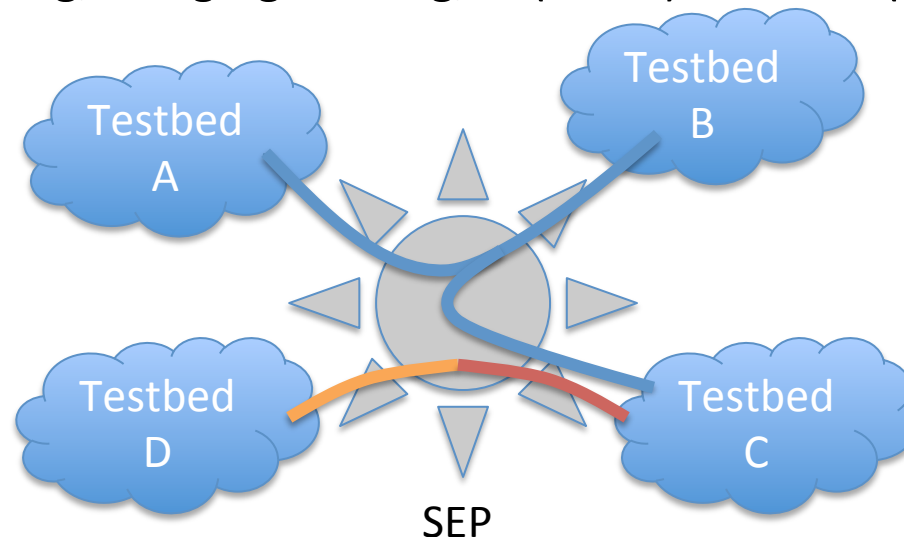
Michiaki Hayashi (KDDI R&D Labs.)  
Toshiaki Tarui, Yasushi Kanada(Hitachi)  
Aki Nakao (U Tokyo)

# Slice exchange model



# Contributions of SEP to global experiments

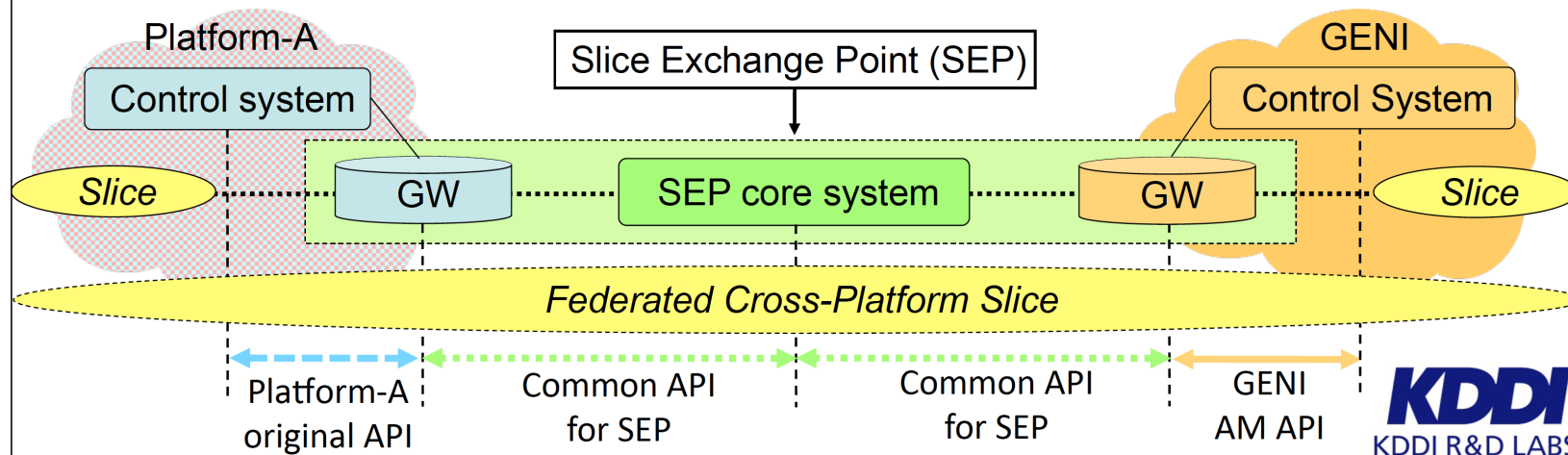
- Infrastructure-neutrality
  - “Common” API
  - Resource description
  - New and remarkable capabilities of each testbeds
- Effective interconnection
  - Improve scalability in terms of # physical connections in P2P model
  - Flexible Data-Plane protocol conversion at peering points (e.g., Stitching, bridging/forking, L2(VLAN) and L3/4(NA(P)T) translation)



# Concept proposal @ GEC14

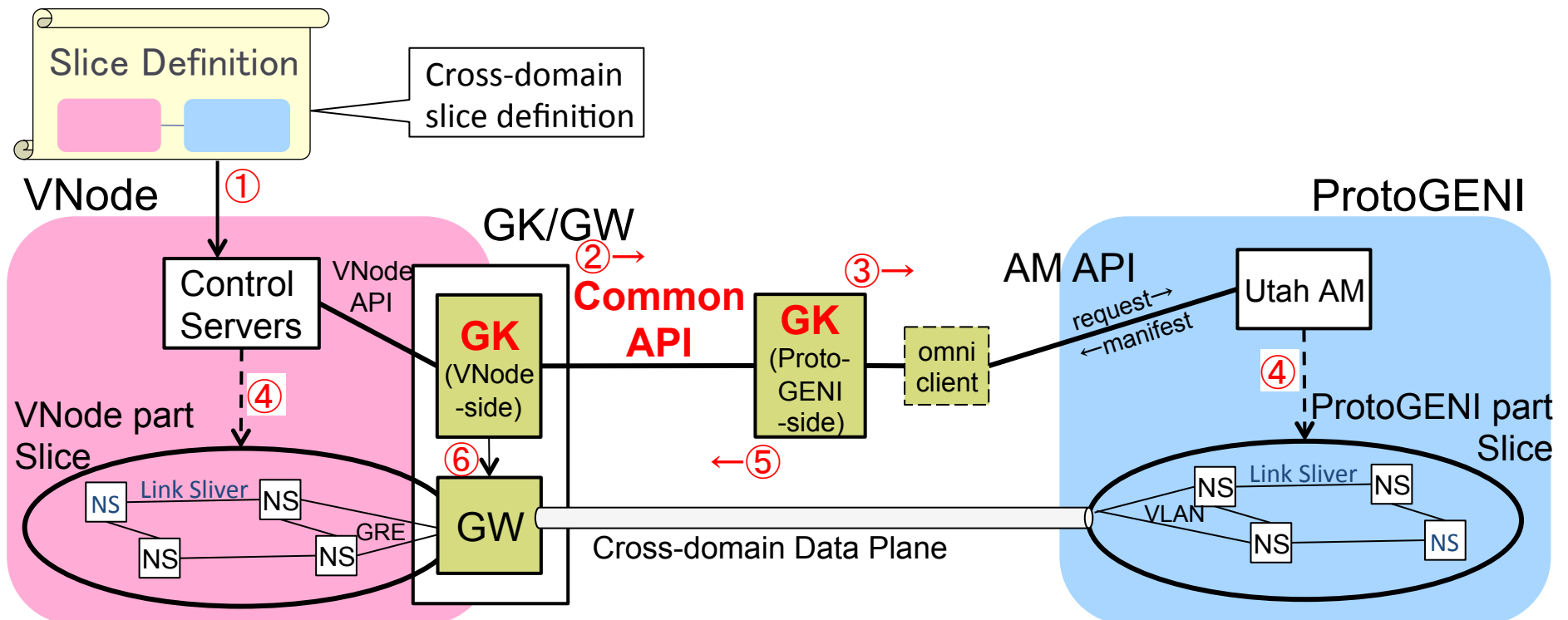
## Slice Exchange Point (SEP): Cross-Platform Slice Federation Architecture

- “Different virtualizaion platforms with Different concepts & control architectures.”
  - GENI Project : IP (L3) network with VM / Raw PC
  - Japanese Vnode Project : Any frame (L2) / IP (L3) network with VM
  - Japanese G-lambda Project: Lambda (L1) / L2 network with VM / Raw PC
- Slice Exchange Point (SEP): Cross-platform slice federation architecture
  - SEP: An intermediation system, bridging the differences of APIs / data-planes / policies / etc, between platforms
  - Unconscious in user’s operation: Slices work like an integrated single slice



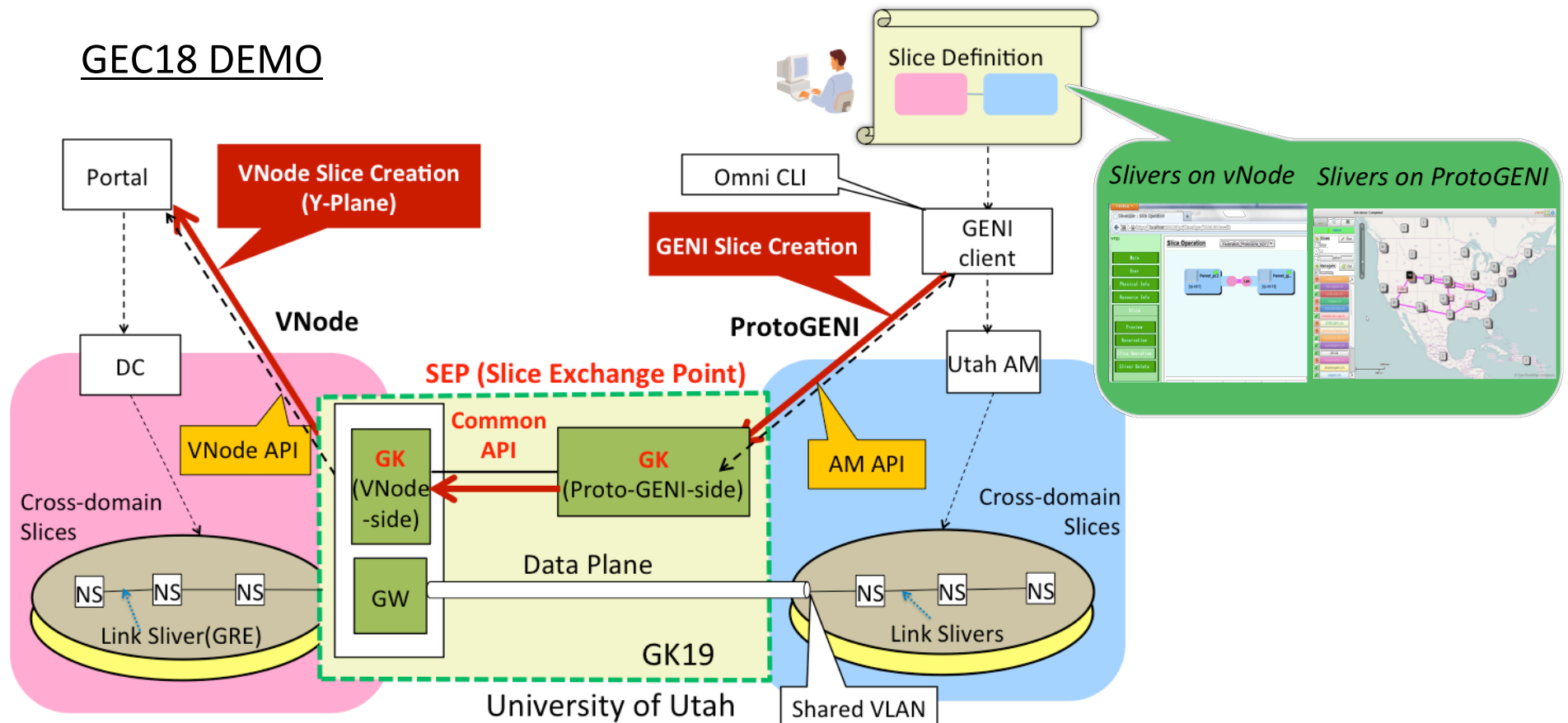
# GEC17 demo

- Cross-domain slice definition is submitted to one domain.
- Gate Keepers (GK) converts domain-specific commands, slice definitions to/from the common API.
- Data Planes are connected by Gateway (GW).

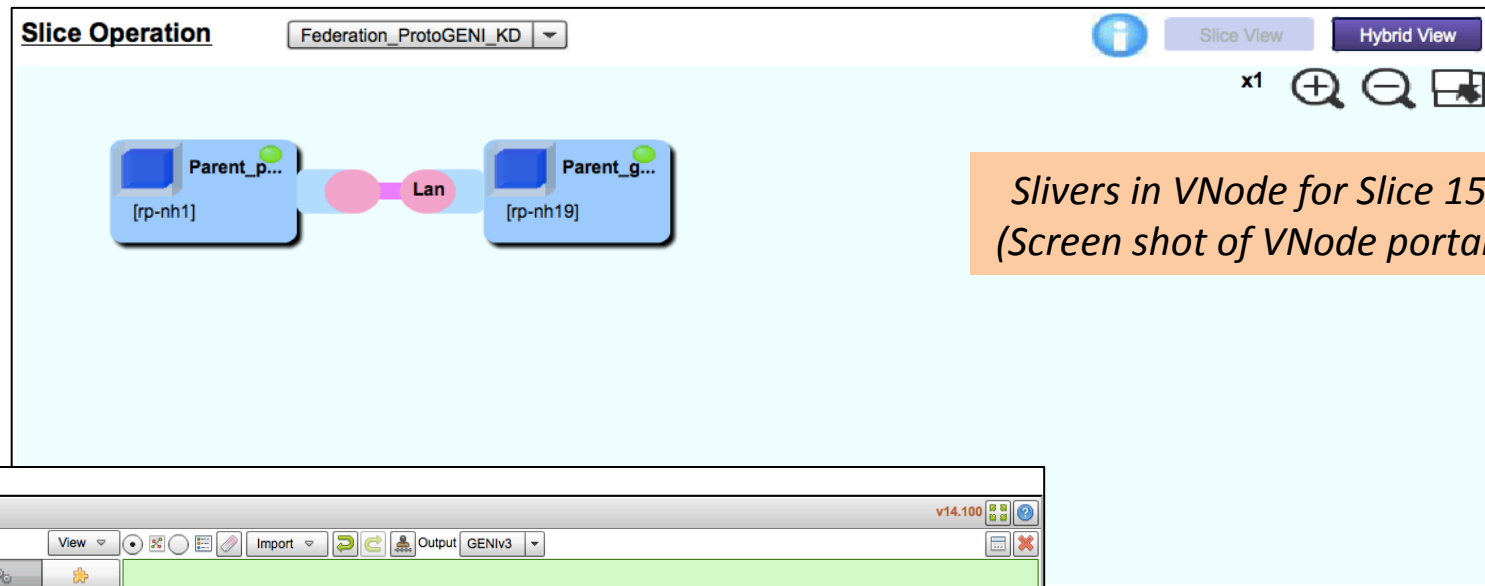


# GEC18 demo

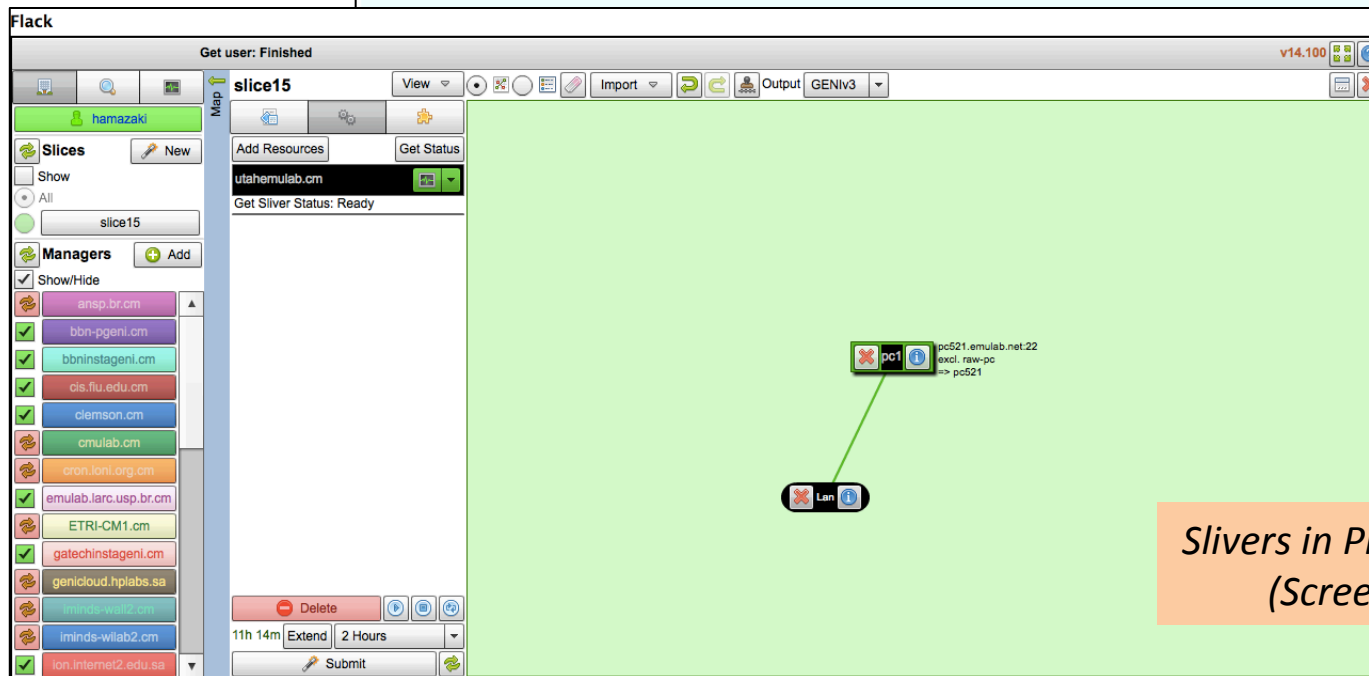
- Two-way federation between ProtoGENI and VNode, which use different resources, slice models, and management policies.



# Provisioned E2E slice (Slice ID=15)



*Slivers in VNode for Slice 15  
(Screen shot of VNode portal)*



*Slivers in ProtoGENI for Slice 15  
(Screen shot of Flack)*

# Common API v2.0

Rev 1.0 Mar. 17, 2014

VNode Project

Federation Architecture and  
Common API / Common Slice Definition  
(Draft V2.0)

You can download from

[http://nvlab.nakao-lab.org/Common\\_API\\_V2.0.pdf](http://nvlab.nakao-lab.org/Common_API_V2.0.pdf)

KDDI R&D Laboratories Inc.  
HITACHI, LTD  
The University of Tokyo