

# IEEE OmniRAN for Heterogeneous Networks

24 July 2012

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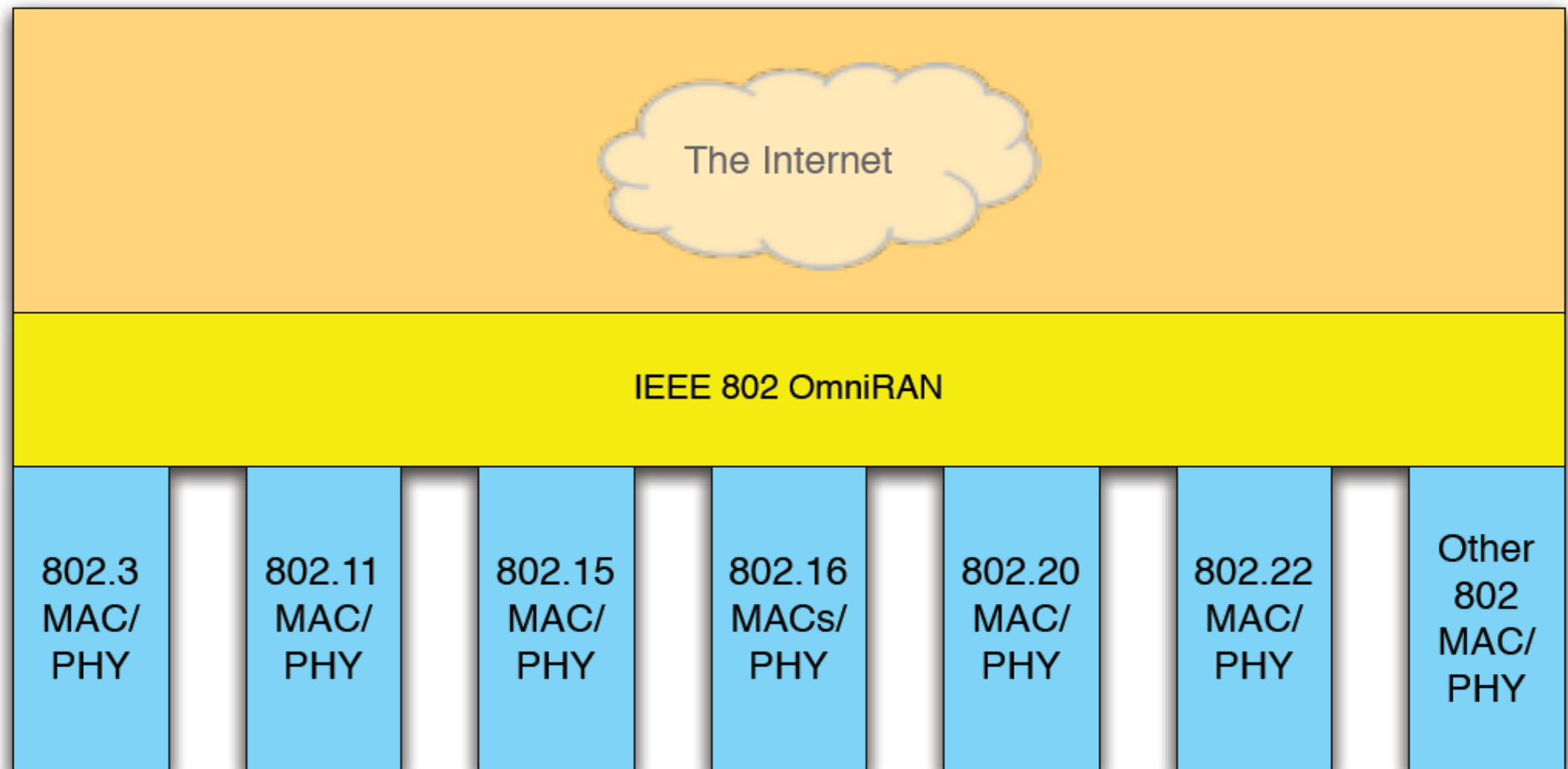
# Introduction

- OmniRAN Tutorial presented at the last IEEE 802 Plenary meeting
  - *Heterogeneous Networking among the IEEE 802 Family*: <http://www.ieee802.org/Tutorials.shtml>
- Discussion currently in HetNet Study Group
- Proposal:
  - new IEEE 802 WG (e.g. IEEE 802.25) to specify access network abstraction layer above IEEE 802 (and possibly other) access technologies

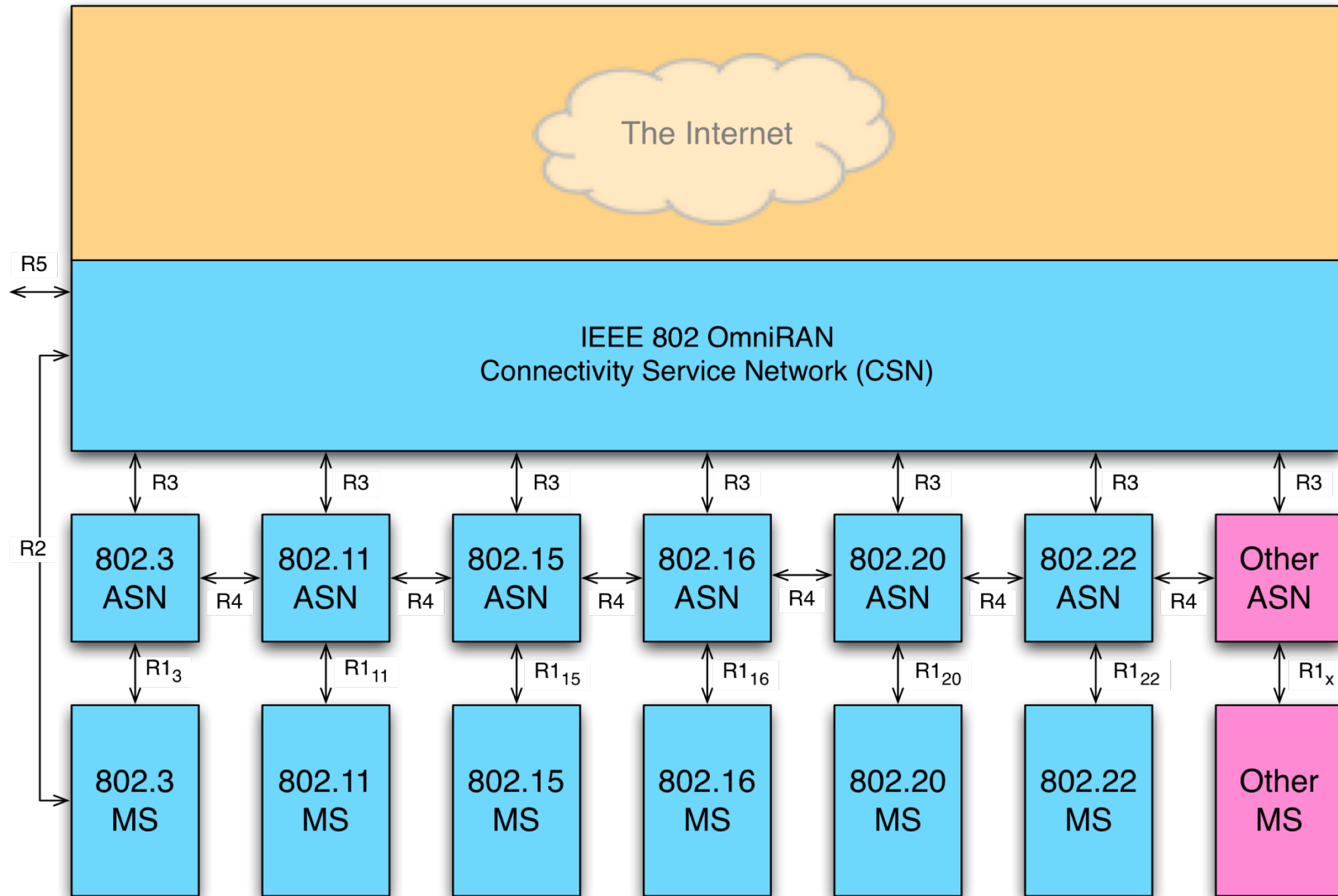
# OmniRAN Expectations

- Use existing IEEE 802 access specifications
- Use existing IETF RFCs
- Relate to some IETF working groups:
  - DMM
  - MIF
  - NETEXT
  - Other?

# IEEE 802 OmniRAN fills a gap



# OmniRAN Architecture



# OmniRAN Functionality Menu

- Network Discovery and Selection
- Authentication & Security
- Provisioning
- Accounting, Charging, and Settlement
- Connection Management
- QoS, Admission Control and Service Flow
- Power Management
- Interworking and Roaming
- Radio Resource Management
- Operation, Administration, Maintenance and Provisioning
- Lawful Interception
- Location Services
- Emergency Telecommunications Service
- VoIP

# OmniRAN and IP Mobility

- Heterogeneous devices require integrated solutions for inter-RAT mobility
  - IETF – LIF informational / recommended practices
  - IETF – DMM not addressing issues below L3
  - IEEE 802.21 offers partial solution to mobility
  - IEEE 802.3, 802.11, 802.15, 802.16, etc, & 3GPP: out of scope
- OmniRAN can fill the gap

# Conclusions / Recommendations

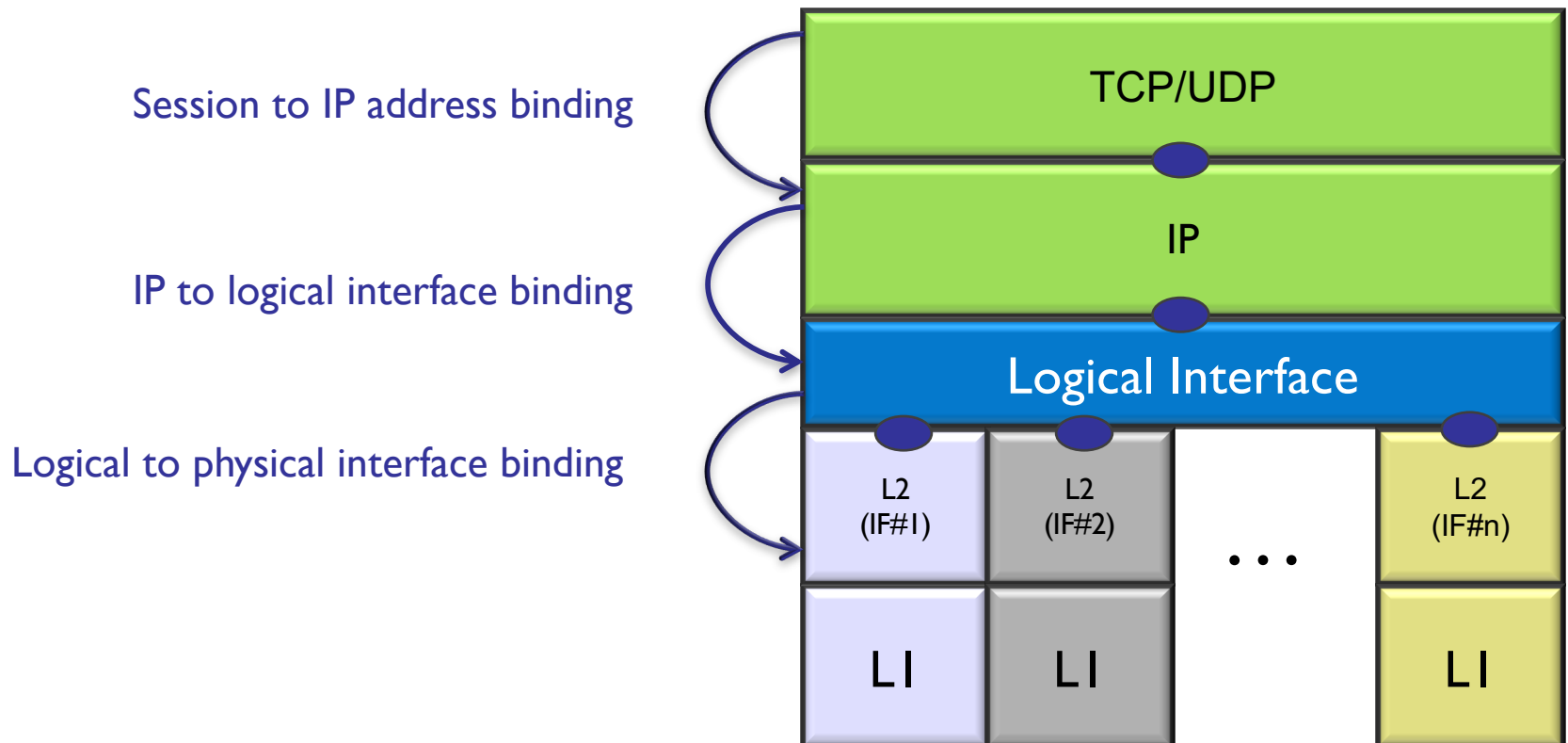
- IEEE 802 OmniRAN can close the gap and tie 802 devices into a family of standards within a heterogeneous IP network supporting evolving IETF standards
- IEEE 802 and IETF should...
  - leverage each other's expertise
  - plan communications
  - identify commonalities
  - link solutions
  - organize a team to coordinate milestones and progress



Backup slides

# IETF NETEXT Logical Interface (Data Plane)

- Allows hiding L2/L1 changes to IP stack and maintaining session bindings active
- Permits forwarding traffic to different access networks / interfaces regardless of the original IP address assignment



# IEEE 802.21 MIHS (Control Plane)

- Provides predictive signaling that can proactively trigger handovers or flow mobility and hence enhance QoE (ES)
- Allows a better control of lower layers to enforce Operator and User's policies (CS)
- Provides information about available access networks (IS)

