IEEE 802 OmniRAN

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Internet Area WG

IEEE 802 OmniRAN Project

- The IEEE 802 is requesting IETF/IntArea for feedback on the draft scope of a new project called OmniRAN

- The draft Project Authorization Request (PAR) and five Criteria (5C) produced by the OmniRAN SG will be considered for approval next week at the IEEE 802 Plenary Meeting in Dallas, TX

- An overview of the project's scope and status will be presented and feedback from IntArea WG will be requested

IEEE OmniRAN Draft PAR/5C

- Scope

  - Network Reference Model and Functional Description of IEEE 802 Access Network

    – Based on the family of IEEE 802 Standards

    – Including entities and reference points along with behavioral and functional descriptions of communications among those entities (similar to Stage-2 specification)
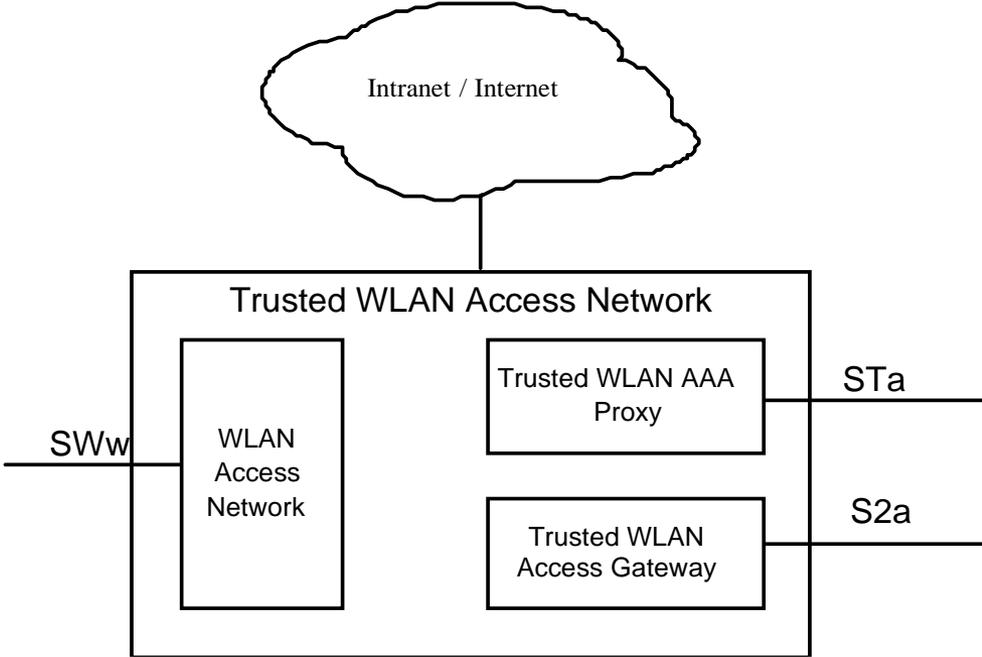
https://mentor.ieee.org/omniran/dcn/13/omniran-13-0086-00-ecsg-proposed-par-and-5c.docx

- Use cases considered by Study Group

 - SDN-based Model

  - Smart Grid

  - 3GPP WLAN EPC access, etc

IEEE 802 OmniRAN Network Model and Reference Points
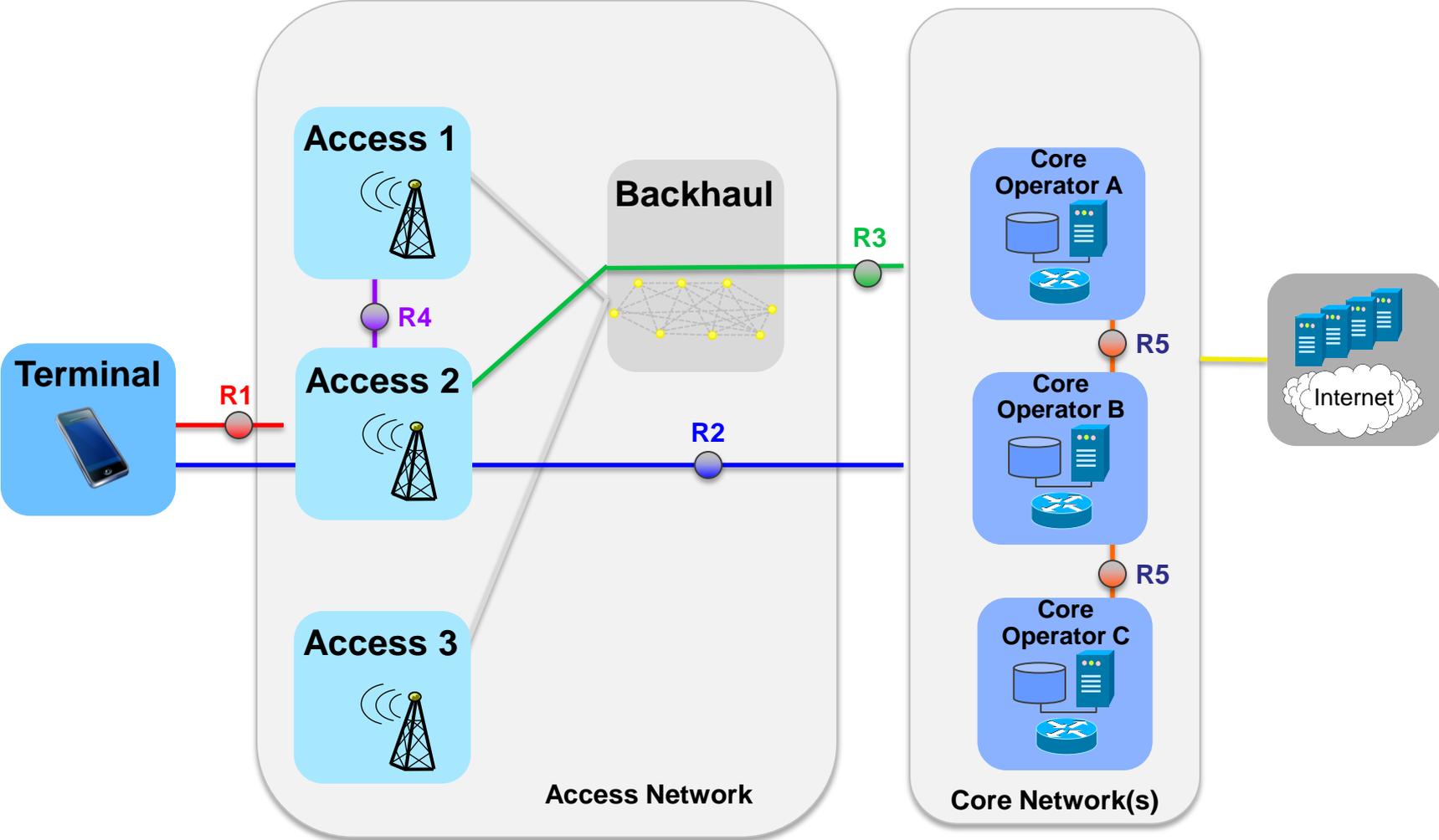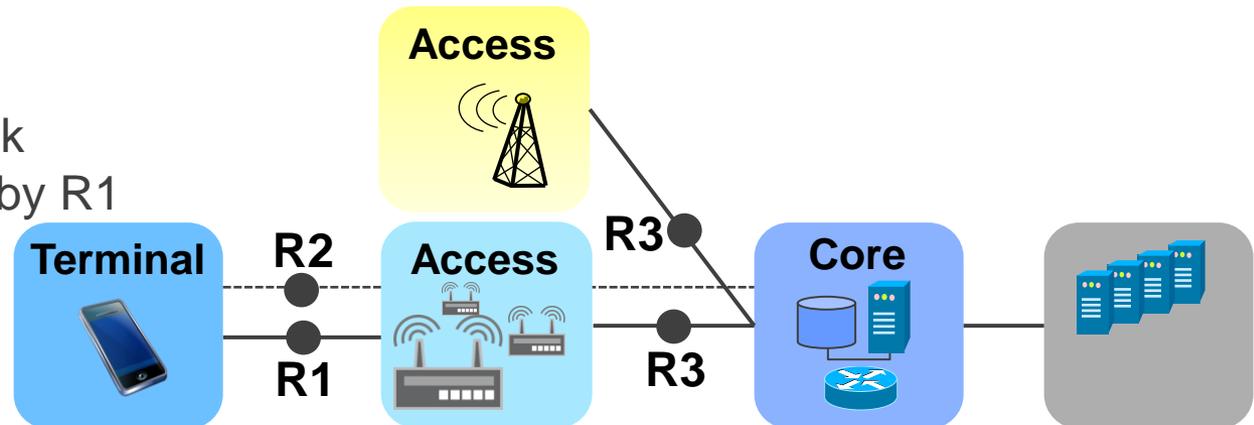
3GPP WLAN EPC Use Case Model

Intranet / Internet

Trusted WLAN Access Network

WLAN Access Network

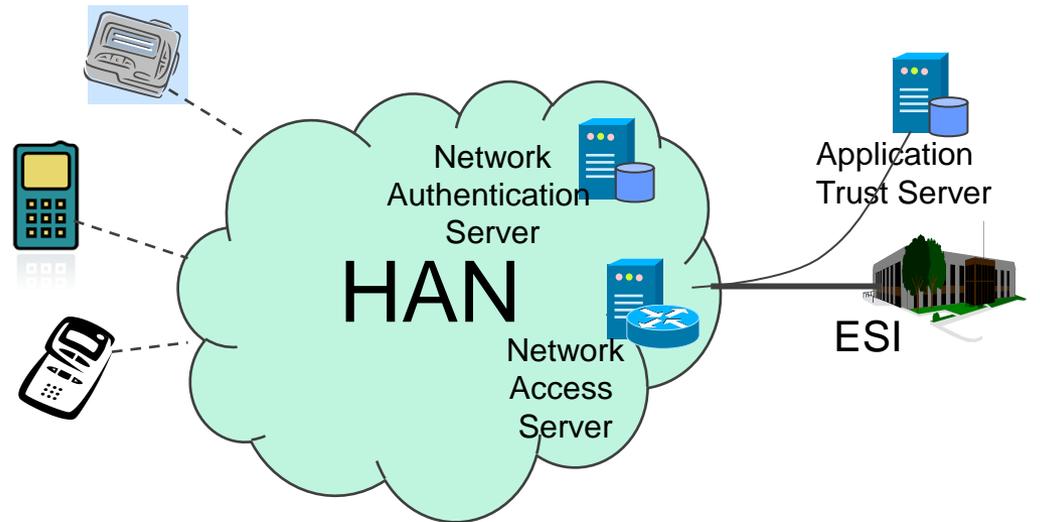Trusted WLAN AAA Proxy

Trusted WLAN Access Gateway

SWw

STa

S2a

- R1 mapping to SWw reference point of 3GPP

- R2 and R3 providing interfaces for Trusted WLAN AAA Proxy and Trusted WLAN Access Gateway

Terminal
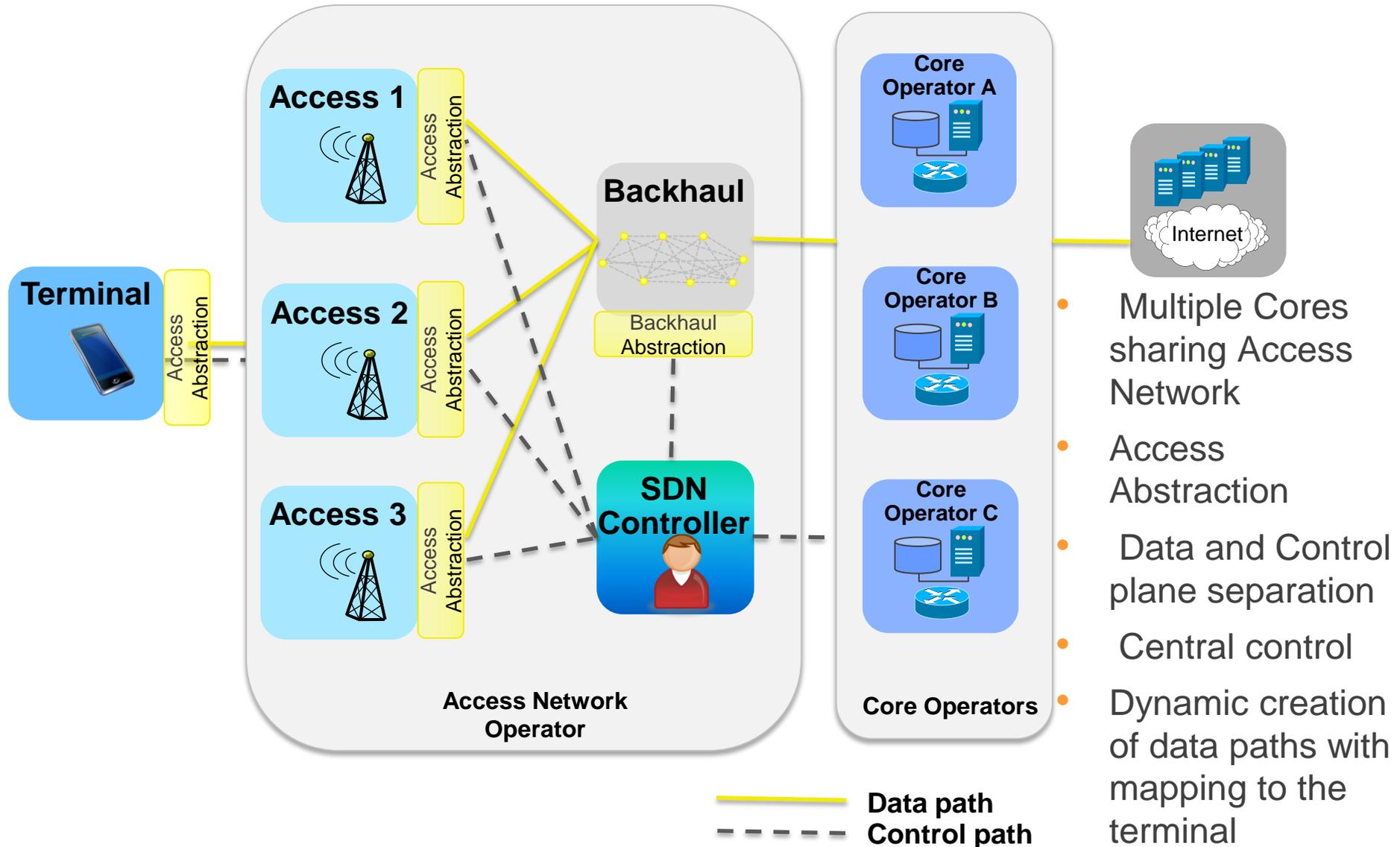
Access

Core

Internet

R1

R2

R3
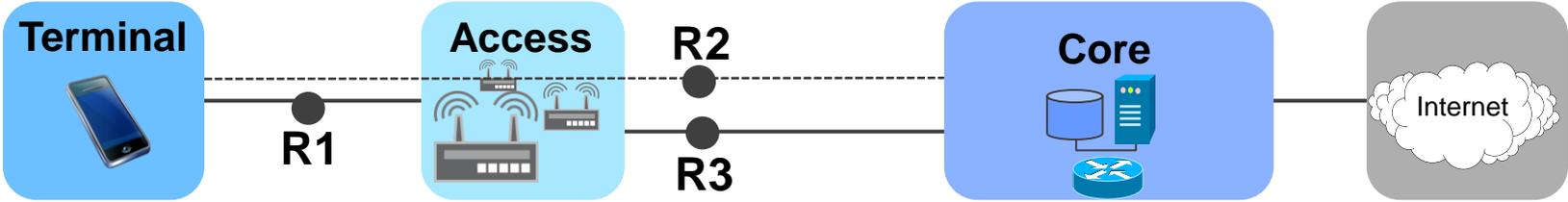
Smart Grid Use Case Model

- Local access infrastructure providing IP connectivity to ESI and Application Trust Server

- HAN containing Access and Core function blocks of OmniRAN

- R3 allowing easy integration of different link layer technologies with common Network Authentication Server and Network Access Server

- R2 providing access authentication for any link technology represented by R1

SDN-based Network Use Case Model

- Multiple Cores sharing Access Network
- Access Abstraction
- Data and Control plane separation
- Central control
- Dynamic creation of data paths with mapping to the terminal

Data path
Control path

OmniRAN Functionalities

Some of the expected functionalities to be analyzed by the group include:

- Control of data forwarding plane, common to 802 technologies
  - Clearly defined interfaces, SAPs (APIs) and behaviors
- Radio configuration mechanism for access and backhaul links
- Data plane management of Terminals with multiple-interfaces
  - Notion of common 802 interface facing L3
- Generic 802 access authorization and attachment
- Mobility services
- Access point discovery, service discovery, location support

Next steps

- Consider feedback from different SDOs and IEEE 802 WGs, amend the PAR/5C (if necessary), and request project approval
    - Likely to become a new TG inside the IEEE 802.1 WG

- Tutorial on "Wireless SDN in Access and Backhaul" to be given at the IEEE 802 Plenary meeting next week in Dallas, TX

Questions/Feedback?