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1. Overview

KDDI

2. Technical Details

Samsung

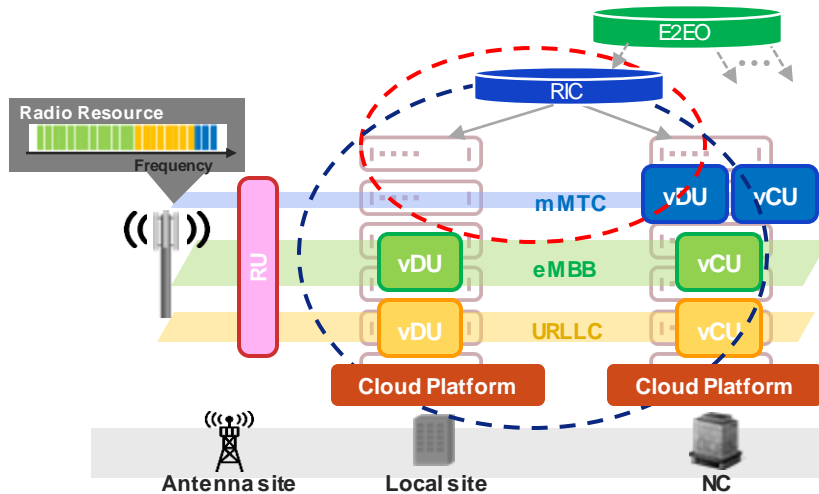
3. Demo Videos

KDDI

KDDI's vision

Delivering new value by network slicing = Creating “E2E network slicing”

- Separate E2E network shall be virtually provided
 - Physical separation can be designed in some entities
- Finely made SLA shall be guaranteed



Our activities in O-RAN for network slicing

1. RIC to manage network slices
2. **RIC to control RAN resource to meet SLA**
3. Multi-vendor capable network slice deployment with open interface

Use cases examples



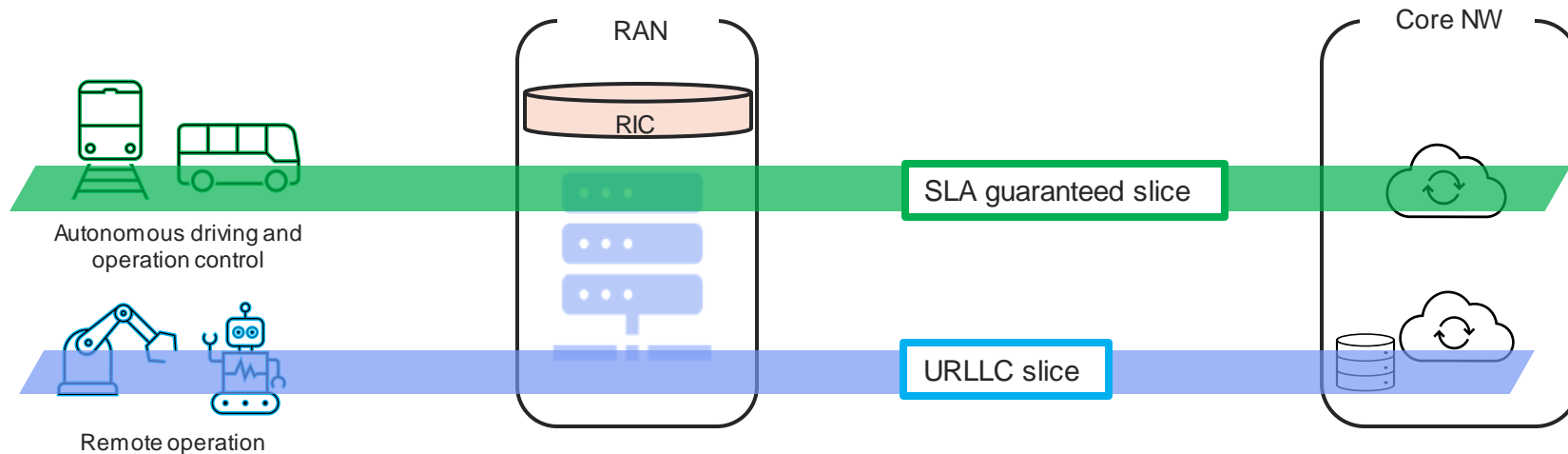
Autonomous driving and operation control for transport industry

- Communication between cars, trains and their control rooms
- High availability and isolation



Remote operation for the manufacturing industry

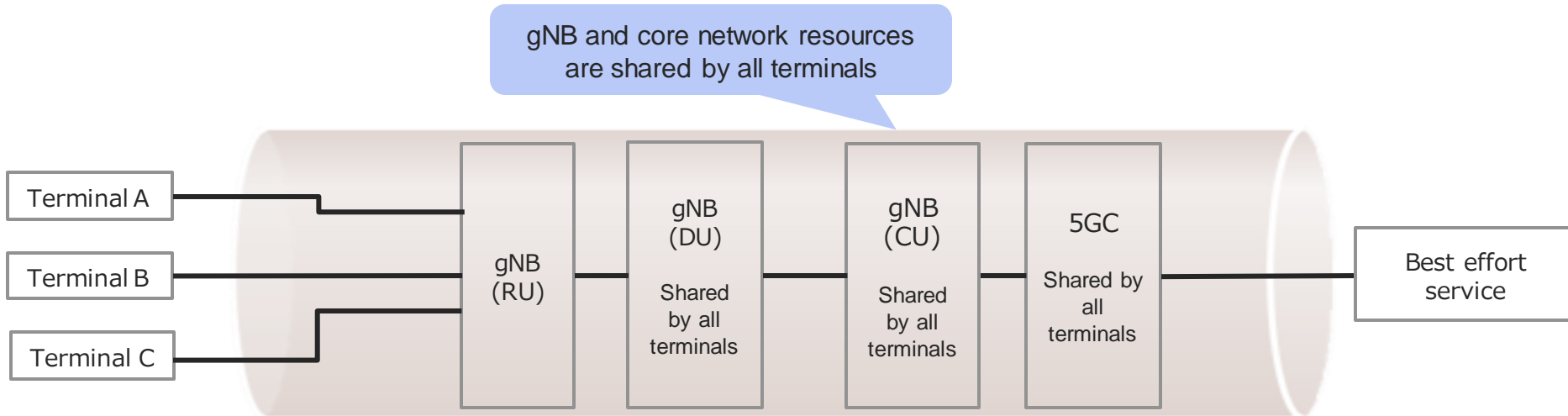
- Sensor information collection and remote operation in a factory
- Isolated and secure network within a factory with MEC



Conventional Network w/o Network Slice

Shared resources and best effort service

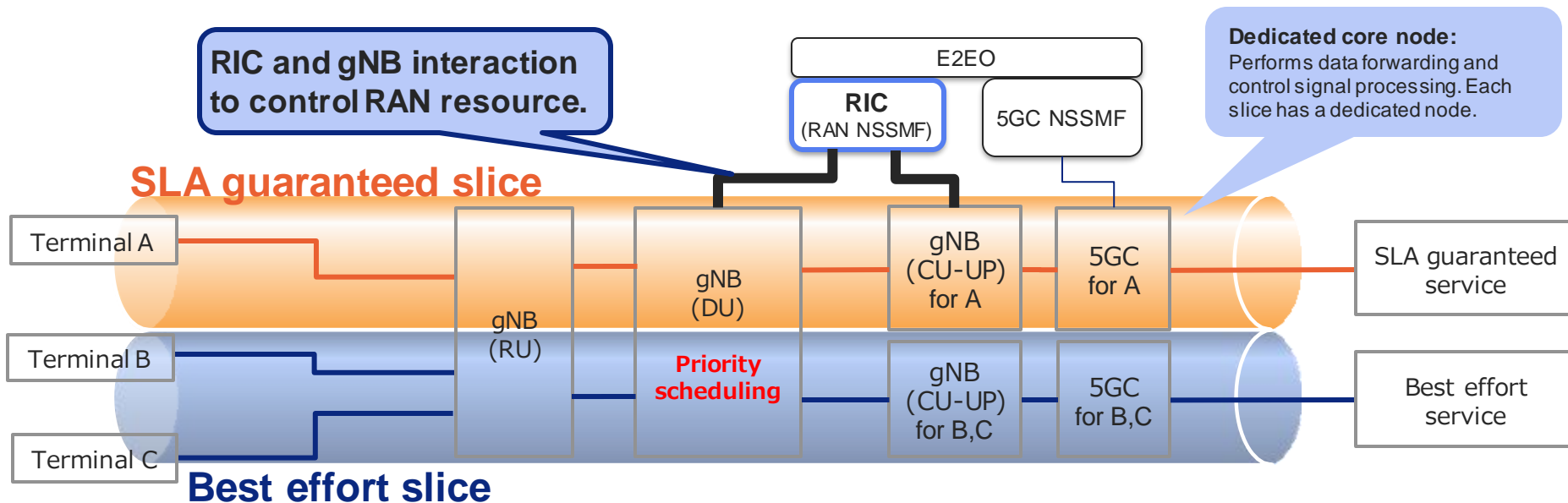
In conventional technologies, all terminals share the same gNB and the same 5G core network. It is difficult to guarantee communication service quality of distinct network terminals.



E2E Network Slicing

Managed networks to provide SLA assurance service

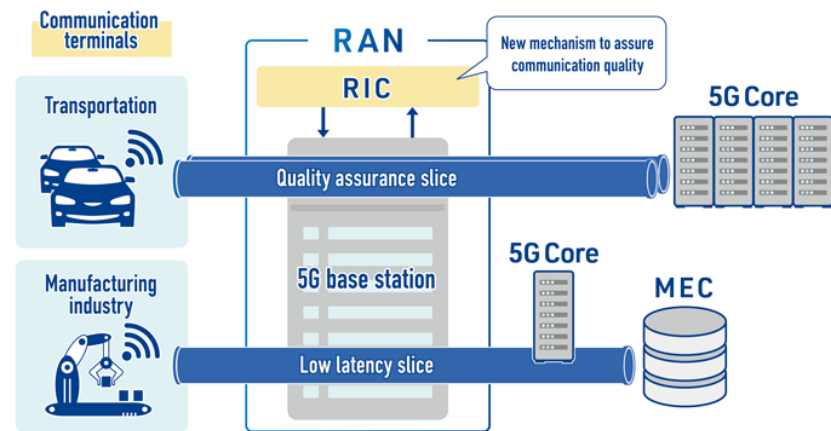
- ❑ Coordination from terminal to core network to manage multiple slices
- ❑ Closed-loop RAN resource control by RIC



PoC: RIC controlling RAN resource in Network slices

Successful Demonstration of E2E Network Slicing in 5G SA Network

- ❑ KDDI, in cooperation with Samsung, has successfully demonstrated network slicing in a 5G standalone network. In the demonstration, end-to-end network is partitioned virtually in order to achieve multiple communication with qualities such as quality assurance, low latency and the like according to the application or needs of customers.
- ❑ This is the world's first successful demonstration of the generation of E2E network slicing where the RIC is used to control network slicing.

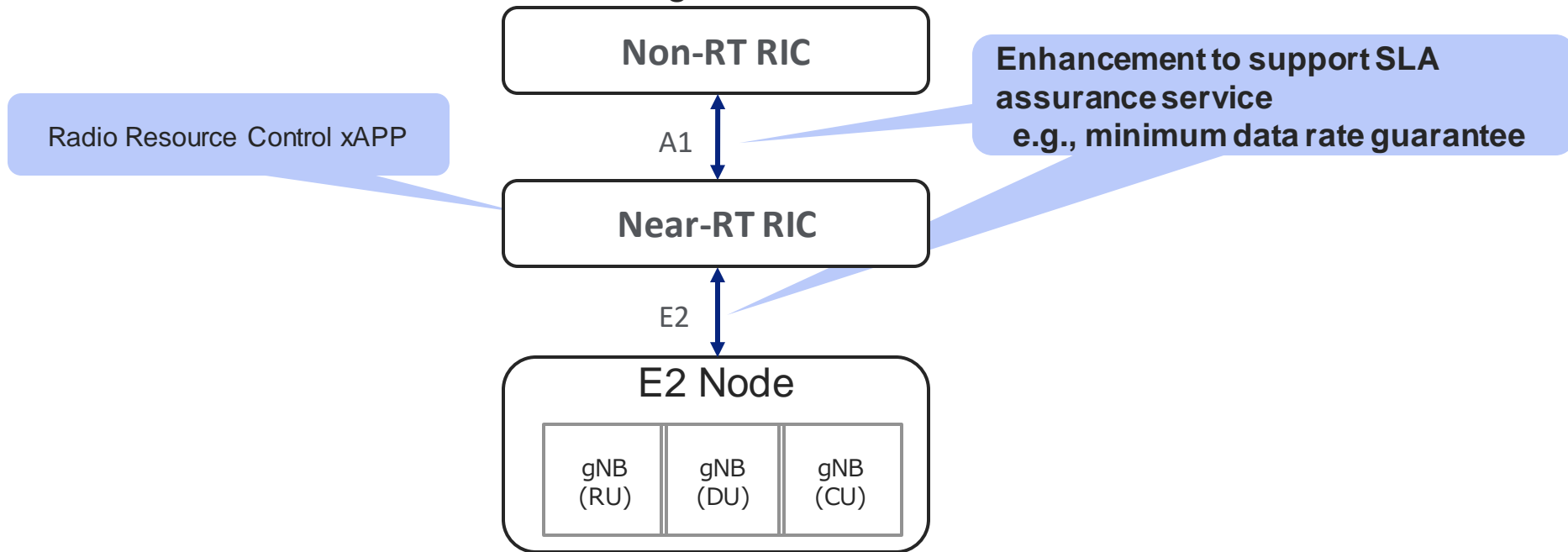


<https://news.kddi.com/kddi/corporate/english/newsrelease/2020/09/23/4684.html>

Radio Resource Control by RIC

Enhancement to support SLA assurance service

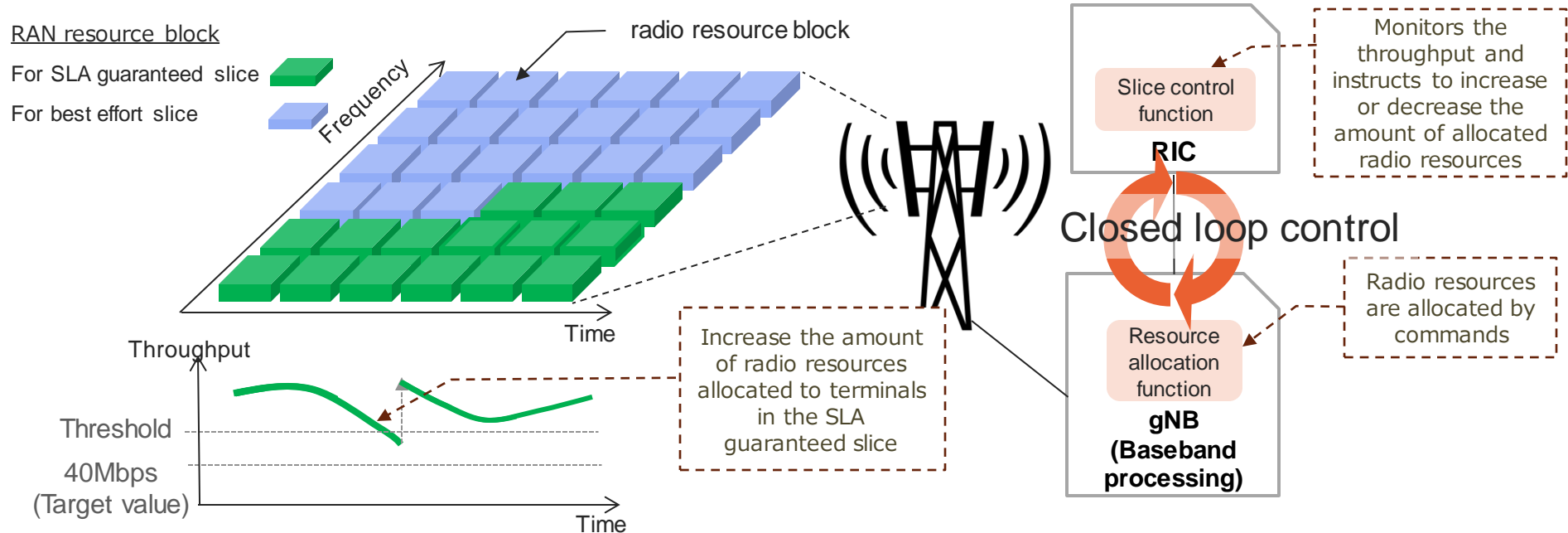
KDDI is contributing with partners to enhance A1 and E2 interface to support SLA assurance service on network slicing.



Interaction b/w RIC and gNB

RAN resource control to guarantee minimum data rate

RIC monitors the terminal throughput in the SLA guaranteed slice and controls the amount of radio resources allocated to maintain the target throughput.



Call for collaboration partners

- **Our PoC demonstrates the potential network slice service with O-RAN technology. More enhancements in O-RAN specification are necessary to provide valuable services on network slicing.**

E.g., A1 and E2 interface enhancements are required to support SLA assurance service.

WG2 WID proposal: “WG2_2020-09-18_WID_SLA_Assurance.docx”

https://oranalliance.atlassian.net/wiki/download/attachments/120521231/WG2_2020-09-18_WID_SLA_Assurance.docx?version=2&modificationDate=1600999821656&cacheVersion=1&api=v2

- **KDDI will continue to contribute to enhance network slicing feature as well as open interfaces in O-RAN Alliance.**

- **Let us work together in O-RAN Alliance to develop the future network!**

Tomorrow, Together

KDDI

おもしろいほうの未来へ。

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