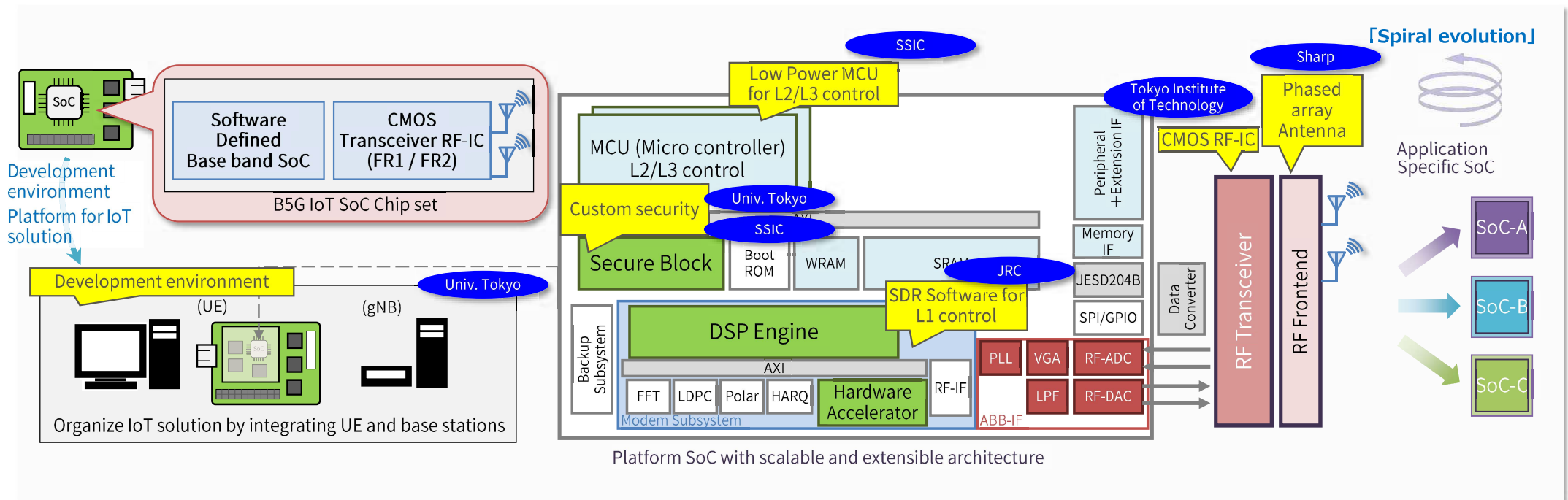


Development of Customizable SoC and SDR in the Beyond5G era

Realizing customizable development environment with SoC for UE in order to spread IoT UE in the B5G era.

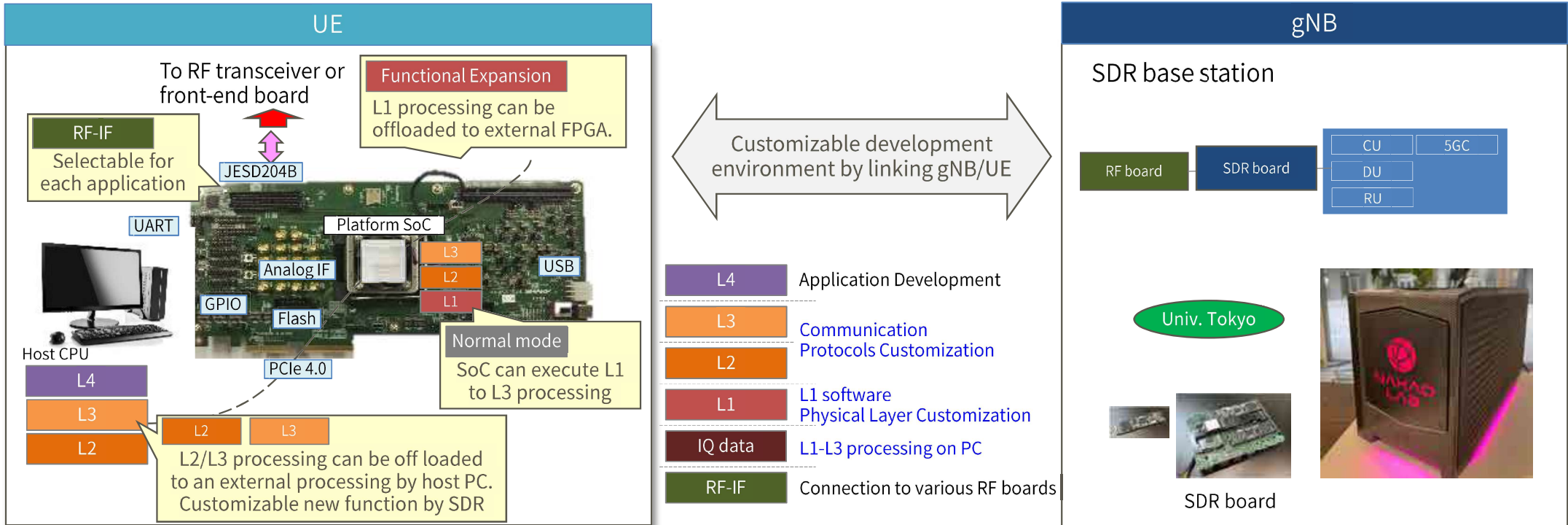
- Developing baseband SoCs with scalable architecture and chipsets with CMOS RF-IC for FR1/FR2.
- Building an SDR development environment that enables the coordination between base stations and terminals, allowing for functionality expansion and addition through software modifications.



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SDR Development Environment

1. Development environment for IoT solutions using platform SoC
 - Customizable functions on the terminal side by linking base stations and terminals at the same time.
 - Available for functional verification of next-generation communications as an emulator for base stations and terminals
2. Scalable platform SoC enables rapid development of next-generation SoCs that are optimized for use cases.

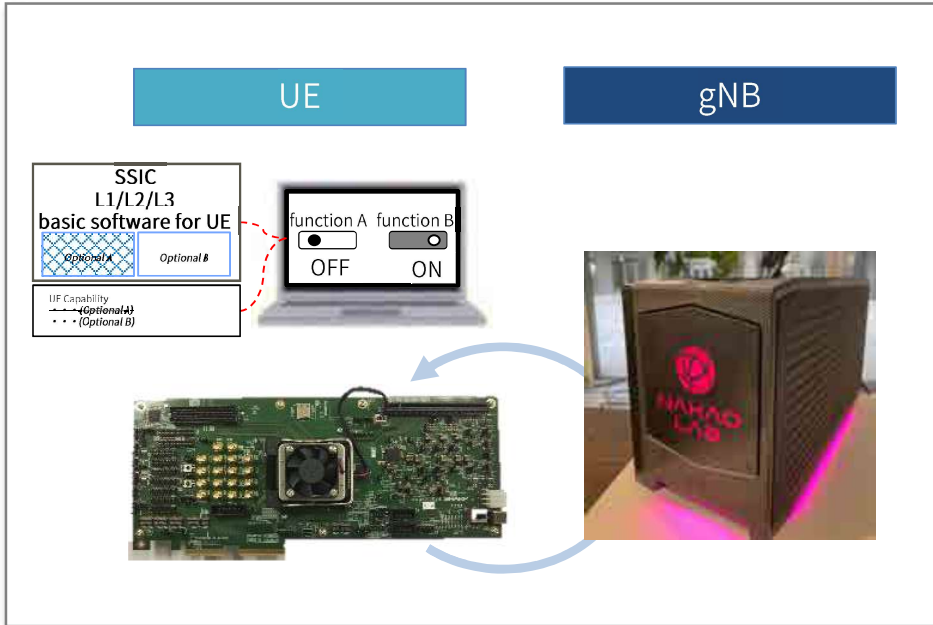


Benefits of using SDR Platforms-1

Development environment for IoT solutions using platform SoC

- Comprehensive customizable environment integrating UE and gNB (including O-RAN related environment)
- Open, flexible and scalable development environment enables flexible functional reorganization according to diverse customer needs.
- Customizable L1 and L2/L3 software
- New features under standardization like NTN can be verified quickly. Therefore, standardization activities can be accelerated.

Comprehensive customizable environment with UE and gNB



Use Cases for Demonstration Experiment

Sep. '24 ~ Japanese Field
FY'25 ~ Oversea Field

Customize terminal functions by linking with SDR base stations for each use cases.

Evolution of communication functions

- Standardization of new functions (evolution of standards)
- Simulation of UE operation with gNB

Communication Reliability

- Realization of "uninterrupted communication" (improvement of communication quality, construction of backup network)

Infrastructure monitoring

- Long-term use across generations of communication standards
- Improved efficiency of sensing and video data transmission

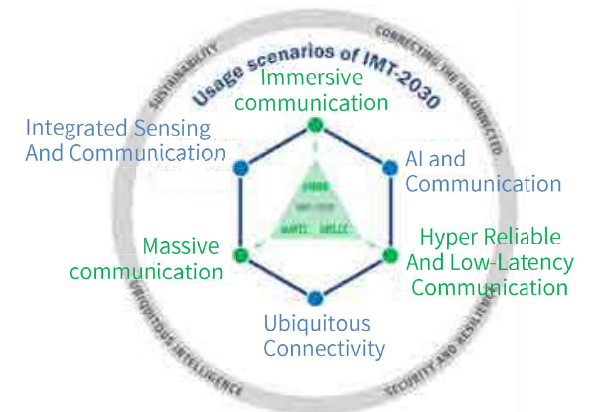
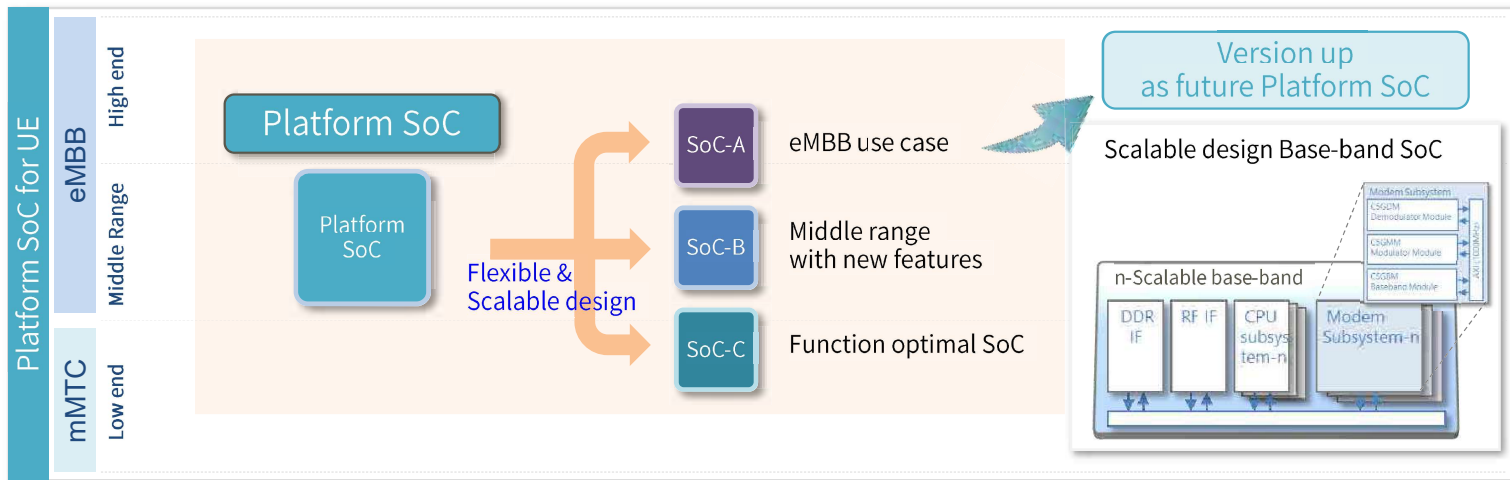
Local government

- Early launch of PoC environment
- Local 5G solves the "out-of-range" problem

Benefits of using SDR Platforms-2

Scalable platform SoC enables rapid development of next-generation SoCs that are optimized for use cases.

- Flexible architecture enables define functionality and performance to the customers demand in a short period of time.
- Scalable architecture can realize long-term use of SoC across the generations of communication standards and divergent use cases.



ITU2030 Usage scenarios