

Expectations for Beyond 5G in an AI society

SHARP CORPORATION

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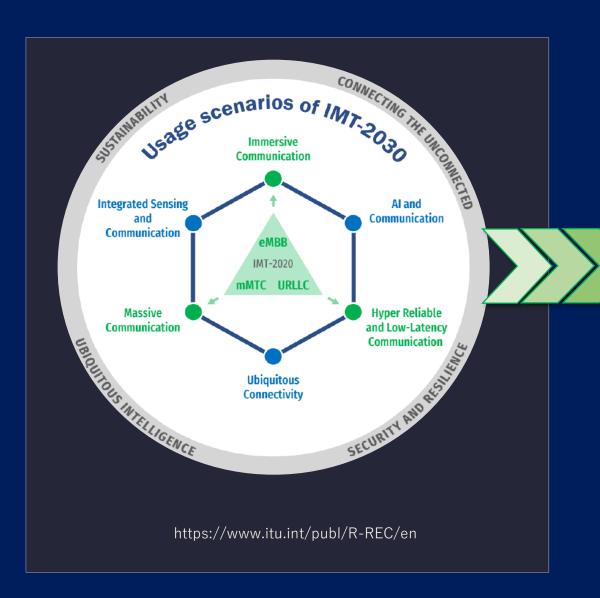
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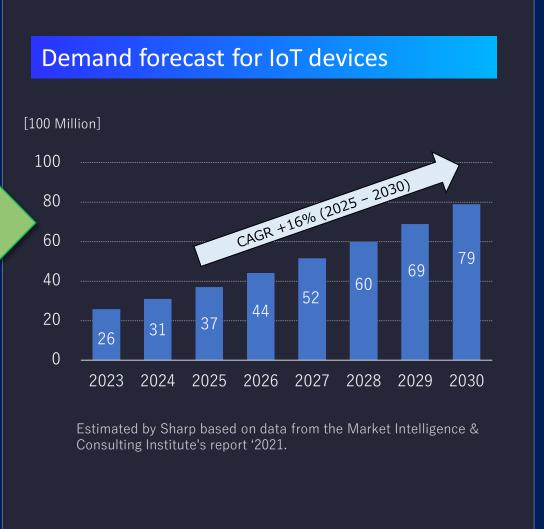


- **◆**Expansion of usage scenario
- **♦** Sharp's approach to Beyond5G
 - [1] Research and development of SoC for IoT communication in Beyond 5G era
 - [2] Research and development of Robotics AI in Beyond 5G era
 - [3] Research and development of V2X in Beyond 5G era
 - [4] Sharp's Standardization Activities and Standard Essential Patent related to 4G/5G
- **◆** To further accelerate efforts toward Beyond 5G

AI expands Beyond 5G world







Sharp's approach to Beyond 5G

R2X

Robotics Al



Cloud AI

Hyper Reliable Communication

Hyper Reliable Communication

Massive Communication

Hyper Reliable Communication

Massive Communication

Ubiquitous Connectivity

Al and Communication

V2X

Edge AI

Sharp's feature technology

B5G · 6G Standardization

B5G IoT SoC

Edge Al

THE Y

Edge LLM

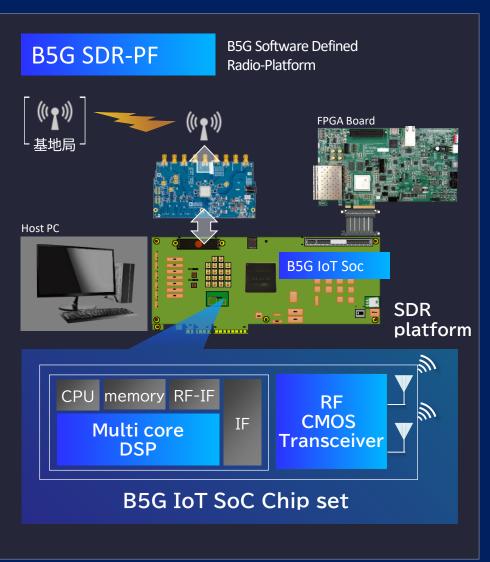
- Real-time responsiveness
- Processing capacitypower limit

Sensing Data

lol

[1] Research and development of SoC for IoT communication in Beyond 5G era





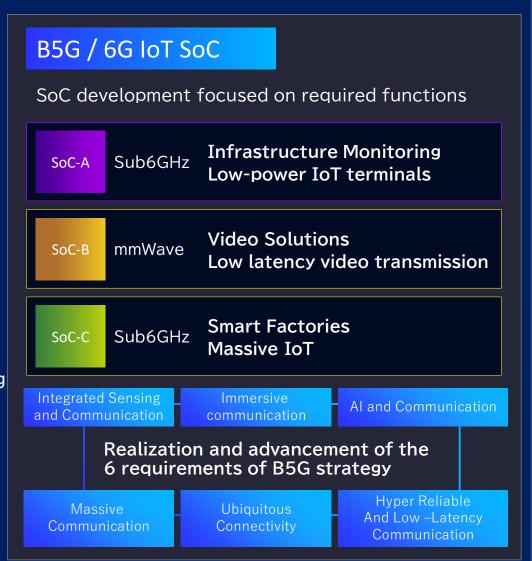
Helical evolution of SoC



Optimize functionality For each use case

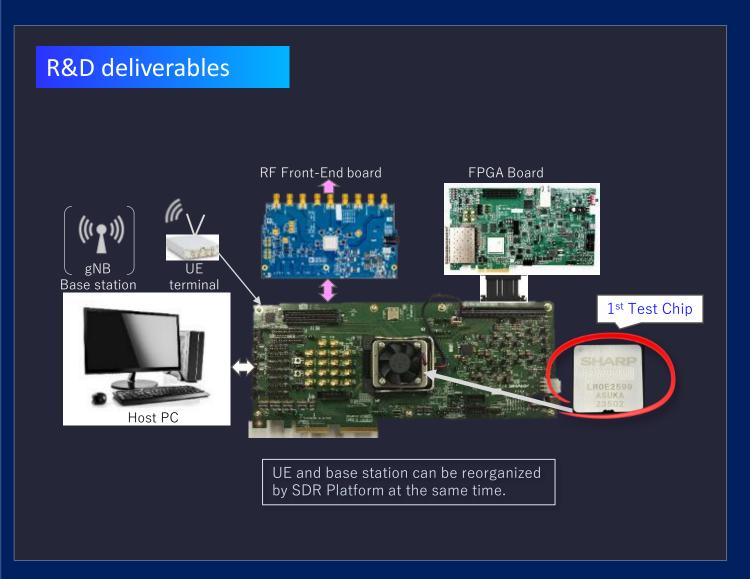
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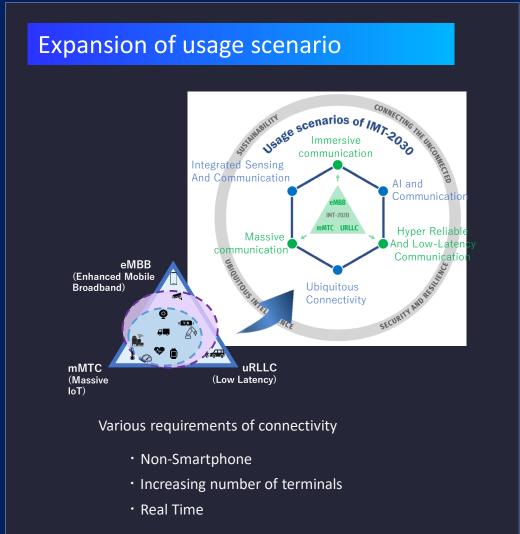
Customized processing of cell search or handover for low latency and low power consumption of L5G



[1] Research and development of SoC for IoT communication in Beyond 5G era



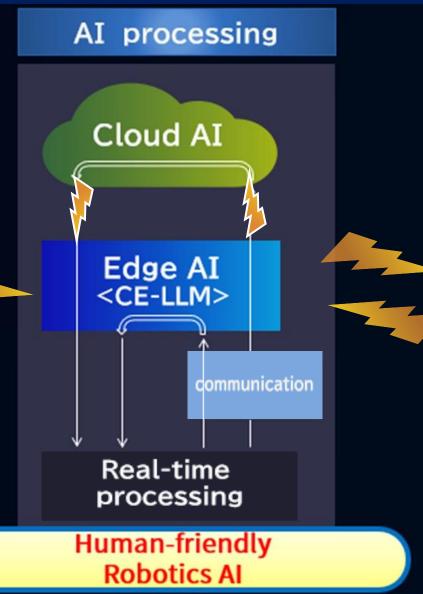




[2] Research and development of Robotics AI in Beyond 5G era







Interface



Interface in the AI era

Edge AI Home Appliances



Smooth and natural conversation with home appliances

Robotics



fast planning

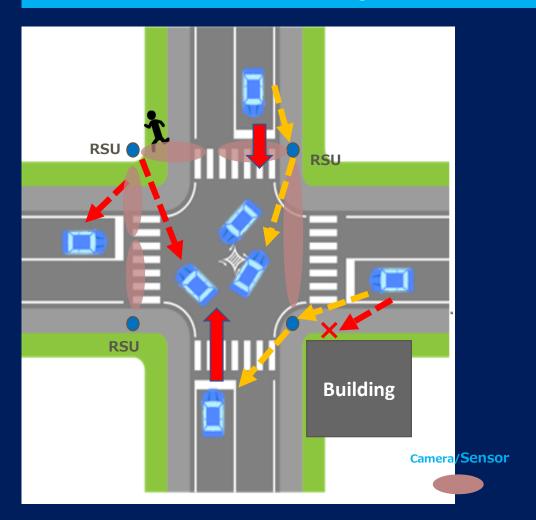


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[3] Research and development of V2X in Beyond 5G era



V2X communication technologies for collective perception





- Recognized information by road-side unit (RSU) and vehicles are shared with other vehicles
- RSU supports recognition of area not recognized by In-vehicle camera and sensors

Sharp is working on research of real-time and High reliable wireless communication technologies for collective perception

Contribute safety and autonomous driving

[4] Sharp's Standardization Activities and Standard Essential Patent related to 4G/5G



- Sharp established a laboratory in 2003 for the purpose of obtaining Intellectual properties of wireless communication standards
- Participated in the standardization of LTE started by 3GPP in 2004. Since then, Sharp has continued to participate until the standardization of 5G.
- Sharp will expand our activities toward B5G standards



"3 GPP" is a registered trademark of TELECOMMUNICATIONS STANDARDS DEVELOPMENT SOCIETY."

for B5G and expand our activities by focusing

on R2X, V2X and Satellite

To further accelerate efforts toward Beyond 5G



Demonstration experiment

Possibility of practical implementation domestically and internationally

Cloud AI

Building partnerships

Active efforts to address technical issues and business opportunities

Dissemination of information

Gaining public understanding of innovative possibilities

Hyper Reliable And Low-Latency

Immersive Communication

Massive Communication

B5G.6G

Integrated Sensing Ubiquitous **And Communication** Connectivity Al and Communication Sharp's feature technology

B5G · 6G Standardization

B5G IoT SoC (I)

R2X

Robotics AI

V2X

Edge AI

Edge

Edge LLM















IoT







