China Mobile’s View on SA4 Rel-20 and 6G Study

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5G-Advanced Rel-20: New capabilities, New value

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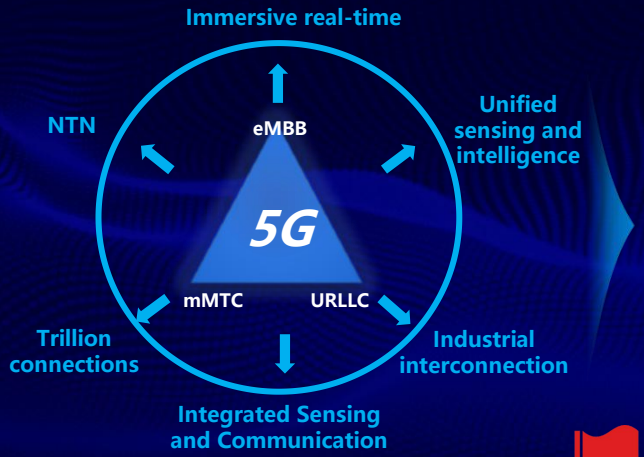
With early 5G-A commercial deployment just starting from 2024, R20 will be key to deliver and support 5G-A markets and serve as basis for 6G.

CMCC Proposed Rel-20 5G-A Content

1. Energy saving and efficiency
2. Voice over satellite, and related enhancement (SA4)
3. AI/ML
4. XR and immersive media enhancement (SA4)
5. NG-RTC enhancement
6. Ambient IoT
7. ISAC
8. Service based UPF and Edge Computing
9. Redundant transmission
10. Digital Twin Network

5G-A New Capabilities



5G-A New Values

Personal |
Terminal intelligence upgrade, bringing ultra-HD, immersive experiences.

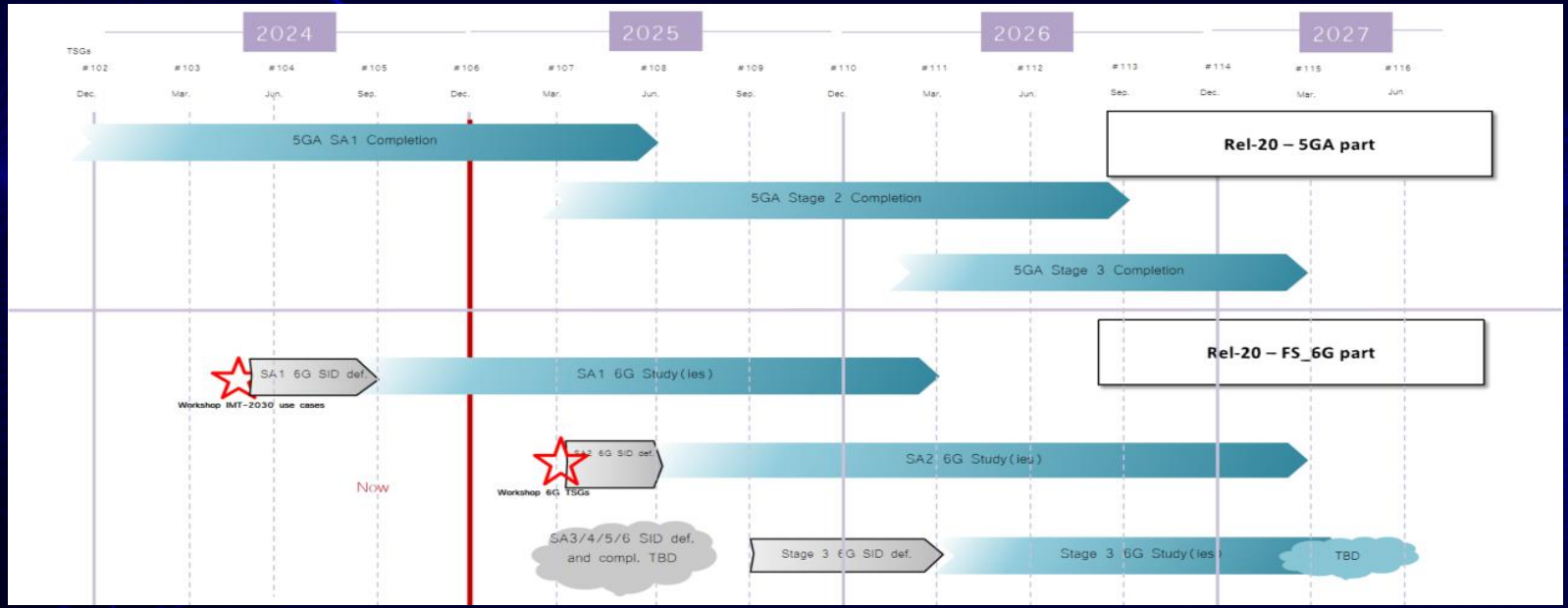
Industry |
Accelerate new industrial development, improving service quality, reducing costs, increasing energy-efficiency, and safety.

Society |
Provide on-demand, ubiquitous, and intelligent societal-level services.

3GPP Work Plan

6G Vision: New terminals, New services

2026-27 will be the stage for the rapid formulation of 6G networks. Both the technology-driven and requirements/pain points-driven aspects need to be carefully considered for 6G research.



In view of related progress/plan, as well as the lessons learned from 5G, it is proposed to set the SA2 6G SI Completion data not earlier than March 2027.

Reference: SP-241861, China Mobile, BT, China Telecom, China Unicom, Deutsche Telekom, Dish, KPN, KT Corp., Rakuten Mobile, TIM, Vodafone, 3GPP TSG SA#106

6G Vision: Potential Use Cases

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China Mobile is leading the only 6G-related study in SA1 within 3GPP, FS_6G-REQ. The study is expected to be completed on March, 2026, it currently includes five research directions:

- ✧**Integrated Sensing and Communication**
  - ✧New applications and services that require sensing capabilities. Based on extensive, multi-modal sensing functions, these applications capture spatial information of unconnected objects, and their movements, and surrounding environments, enabling communication based on these data.
- ✧**Ubiquitous Connectivity**
  - ✧Address areas that are currently uncovered or sparsely covered, especially rural, remote, and sparsely populated regions, as well as indoor connectivity issues.
- ✧**Immersive Communication**
  - ✧Supporting the mixed transmission of video, audio, haptic, and other environmental data in a reliable and synchronized manner, with low latency and high data rates.
- ✧**Massive Communication**
  - ✧All kinds of massive communication technologies，such as LPWA and etc.
- ✧**Further Use Cases on Industry and Verticals**
  - ✧Requirements from industry and verticals

Reference：S1，3GPP TSG SA#106

Next-generation Video Codec for 6G Services

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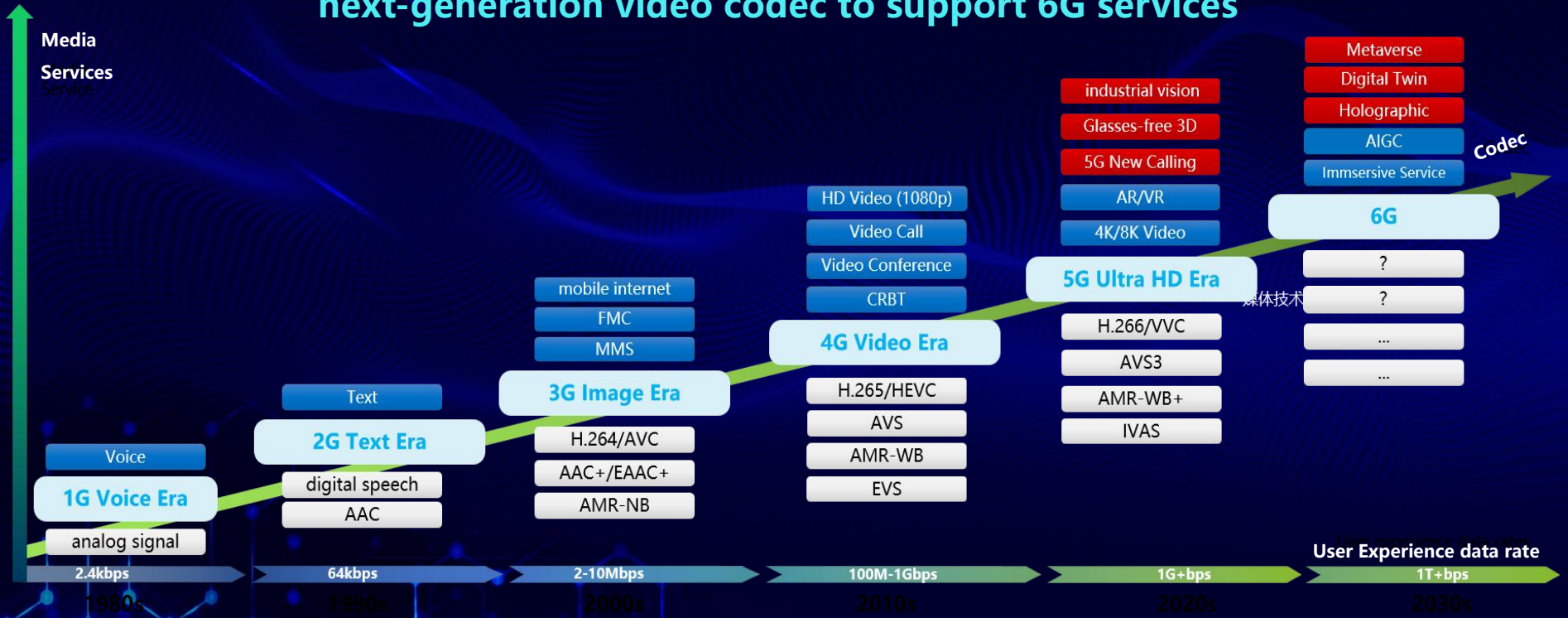
In the context of ultra-large bandwidth, ultra-low latency network support, and the explosive development of media AI technologies, immersion and intelligence will become key directions for the evolution of visual applications. This necessitates the next-generation video codec to support 6G services




Looking forward to collaborating in SA4 to advance 5G-A and 6G study