

FSAN vision and roadmap, and CTC's view on OAN

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A world-wide industry association

coordinates the development of voluntary consensus standards in the field of optical access networks to improve the technology and distribution of broadband optical access services and products for the benefit of the industry as a whole, its customers and consumers

1995~2021

Founding members - BT, FT, DT,
TI, Bell Canada, BellCore, NTT



Ref: FSAN Workshop 2009 by Dr. Tetsuya Miki

2022~

We, the operator company members of FSAN:

AT&T Services, Inc.,
British Telecommunications PLC,
China Telecommunications Corporation,
China United Network Communications Corporation Limited,
Chunghwa Telecom Co., Ltd.,
Deutsche Telekom AG, Deutsche Telekom Technik GmbH,
KDDI Corporation,
Nippon Telegraph and Telephone Corporation,
Orange S.A.,
SK Telecom Co., Ltd,
TIM S.p.A.
Telekom Malaysia Berhad,
Verizon Communications Inc.,

agree to renew the FSAN charter as presented below.

Ref: FSAN Charter 2022

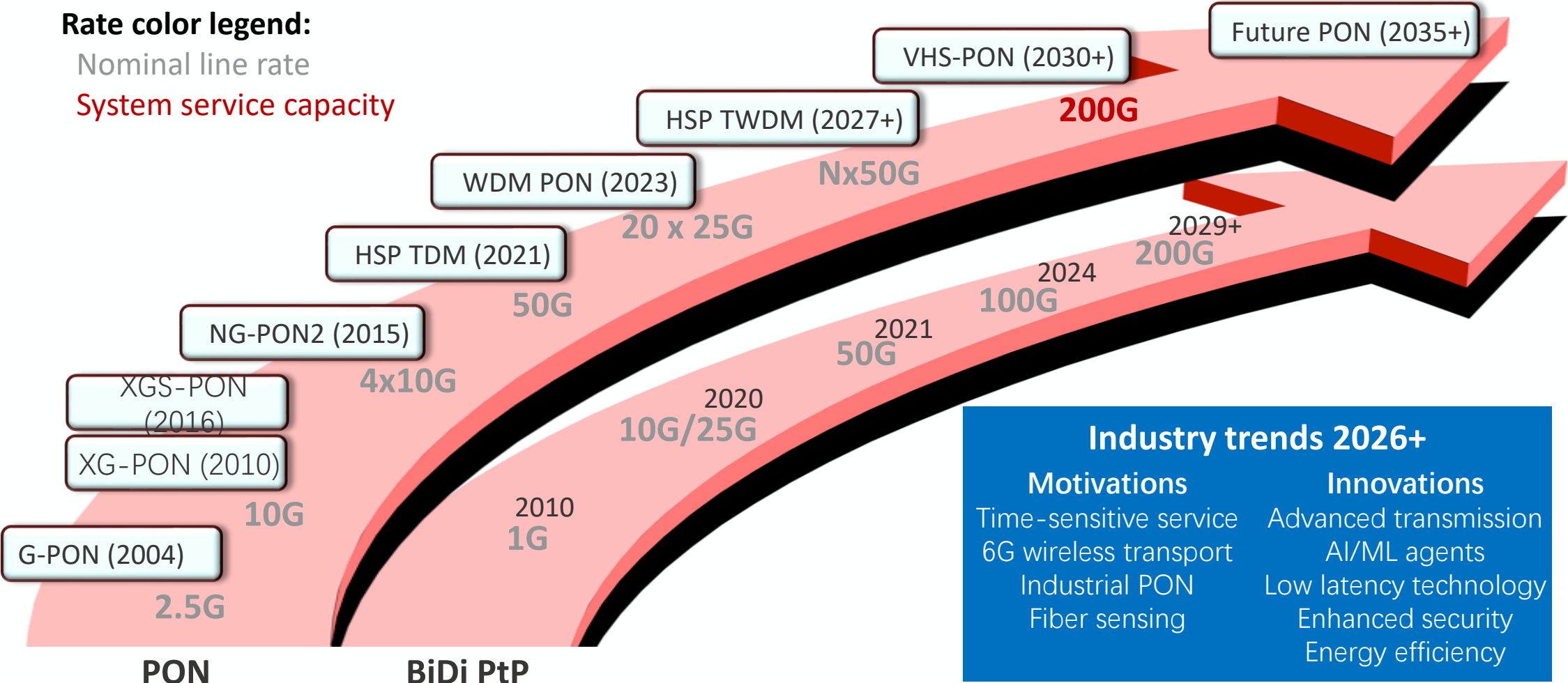
Approaches

Open discussion
Liaison with Other SDOs
Member contributions

Principles

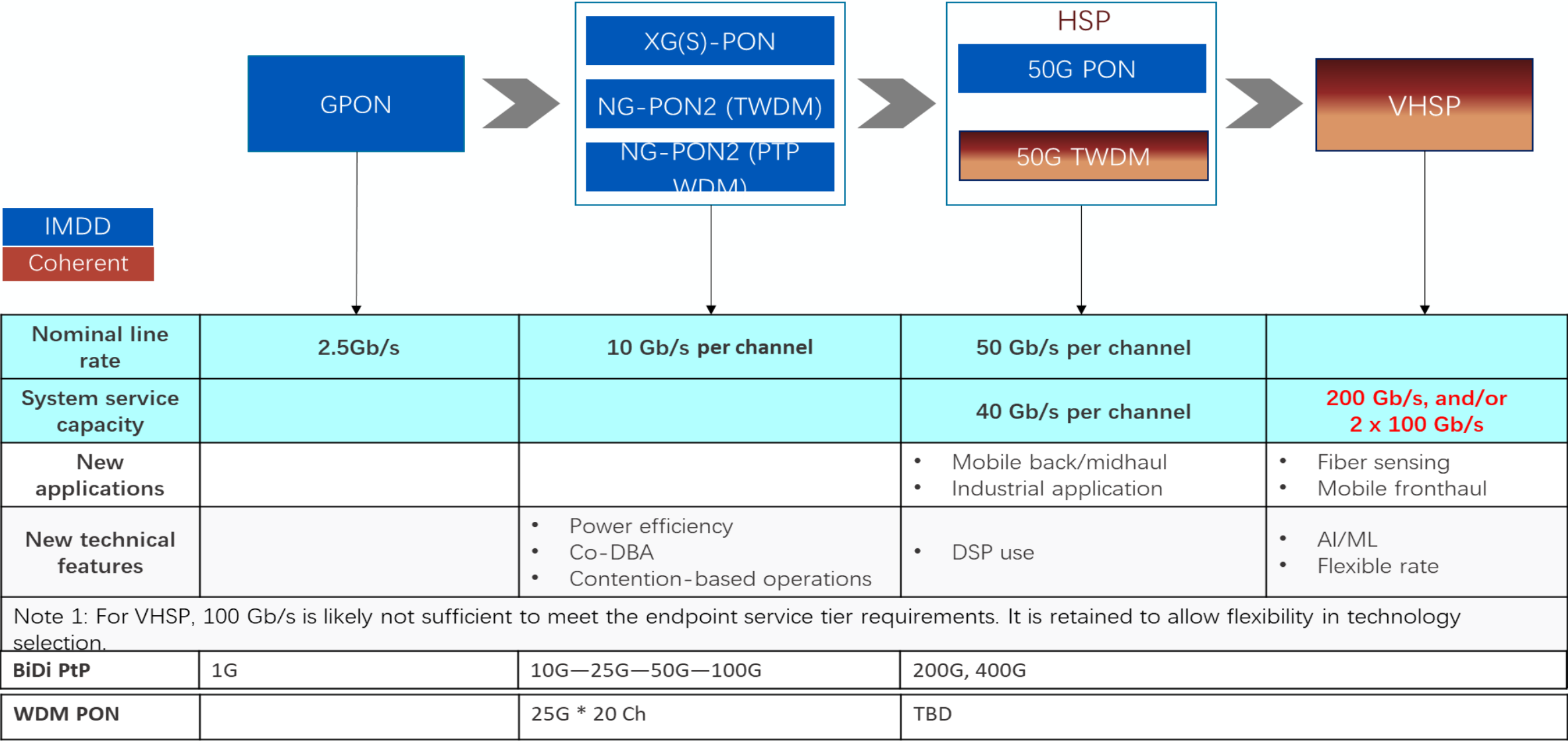
Openness, Balance
Due Process, Appeals,
Consensus

FSAN Optical Access Roadmap 3.0



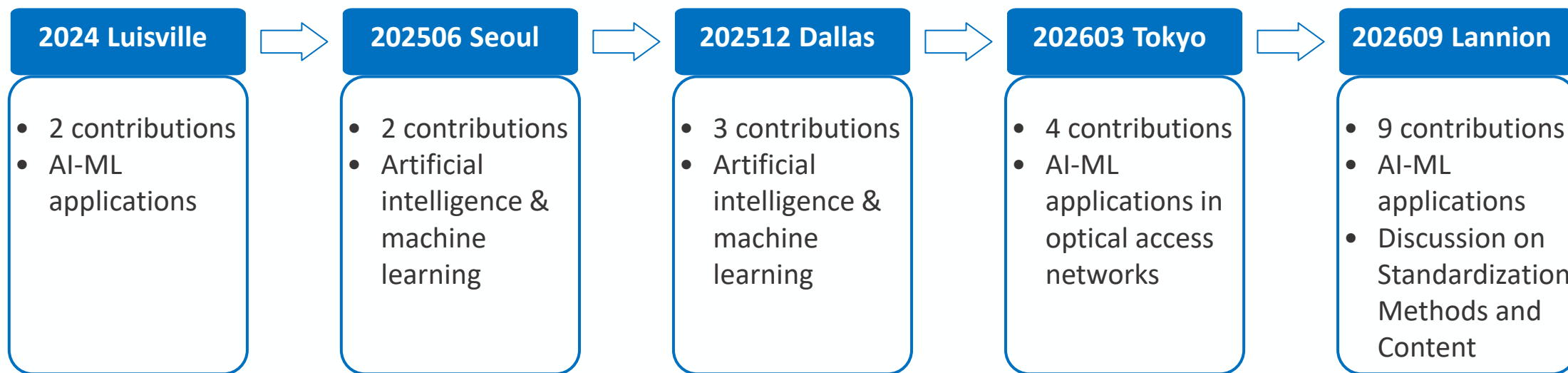
Note: Years indicate the publish of the recommendations.

Supplementary information for Roadmap 3.0

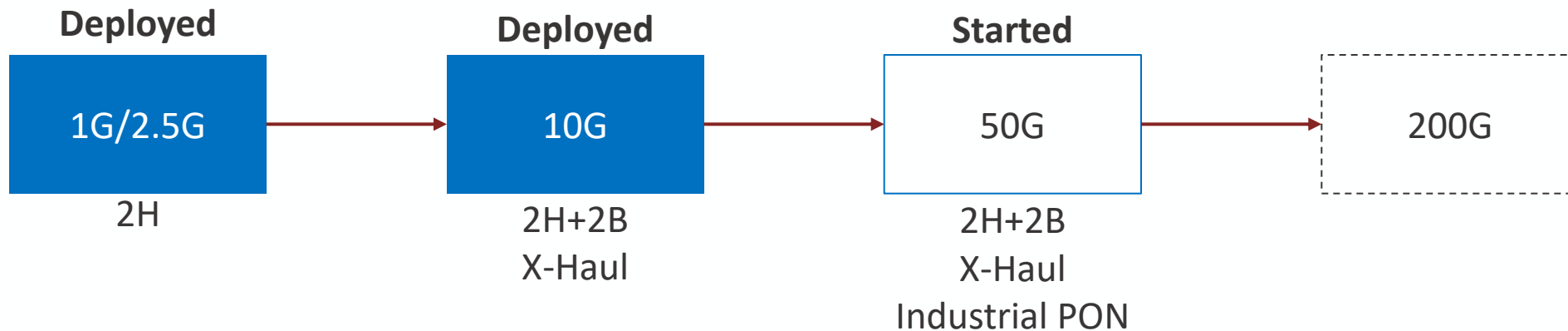


Gradually expanding interest on OAN + AI in FSAN

- Since 2024, FSAN has been focusing on the intelligent transformation of AI-integrated OAN
- Start with the application scenarios and gradually move on to the technical requirements
- Discussions are currently underway regarding the approach to standardization—specifically, what content requires standardization and what does not
- Cooperation with other standards organizations and the full utilization of existing technology are fundamental points of consensus

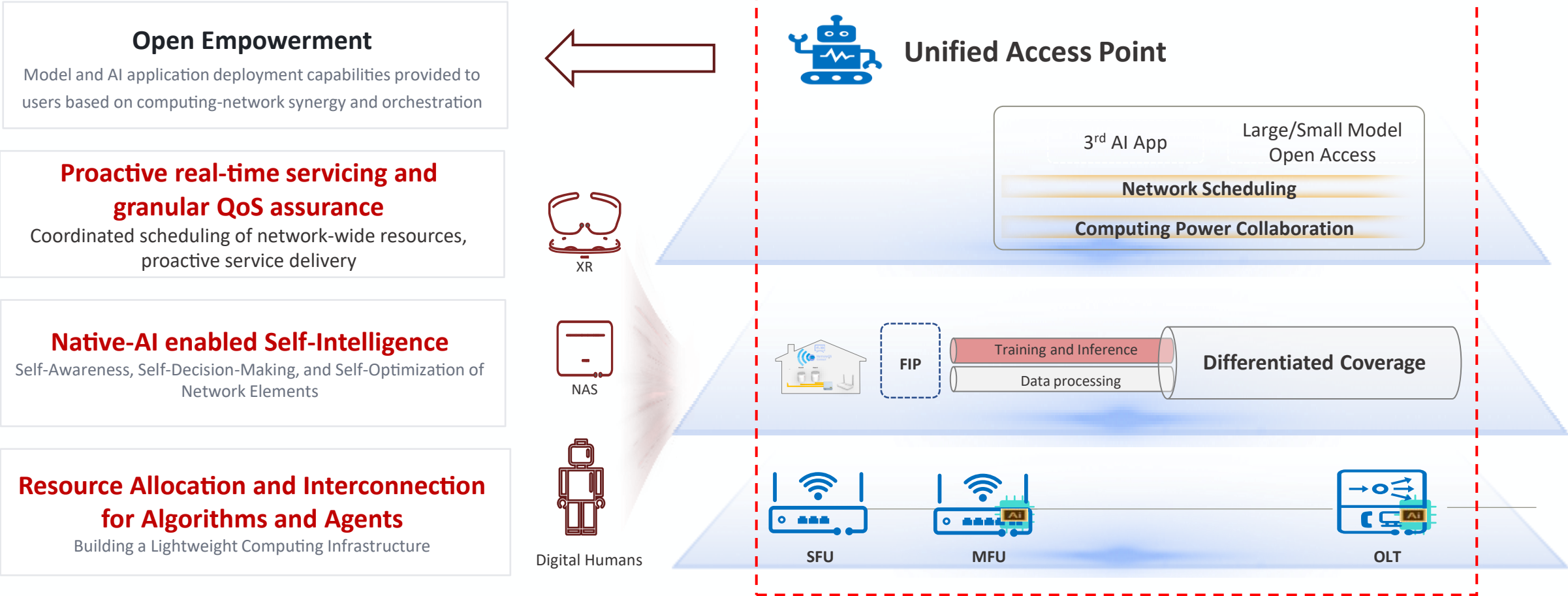


- From technical perspective, distinct generations of OAN are evident
 - System capacity (or line speed) serving as the key metric
 - Simple is best, and **it is better that the global industry work together on unified solutions**
- From deployment perspective, the coexistence of multiple generations is an essential requirement
- From application perspective, expanding from residential users to factories, campuses, and X-Haul
- AI technology must play a significant role in the next OAN generation, **to improve operational efficiency to reduce costs, support new business scenarios, or create new business models**



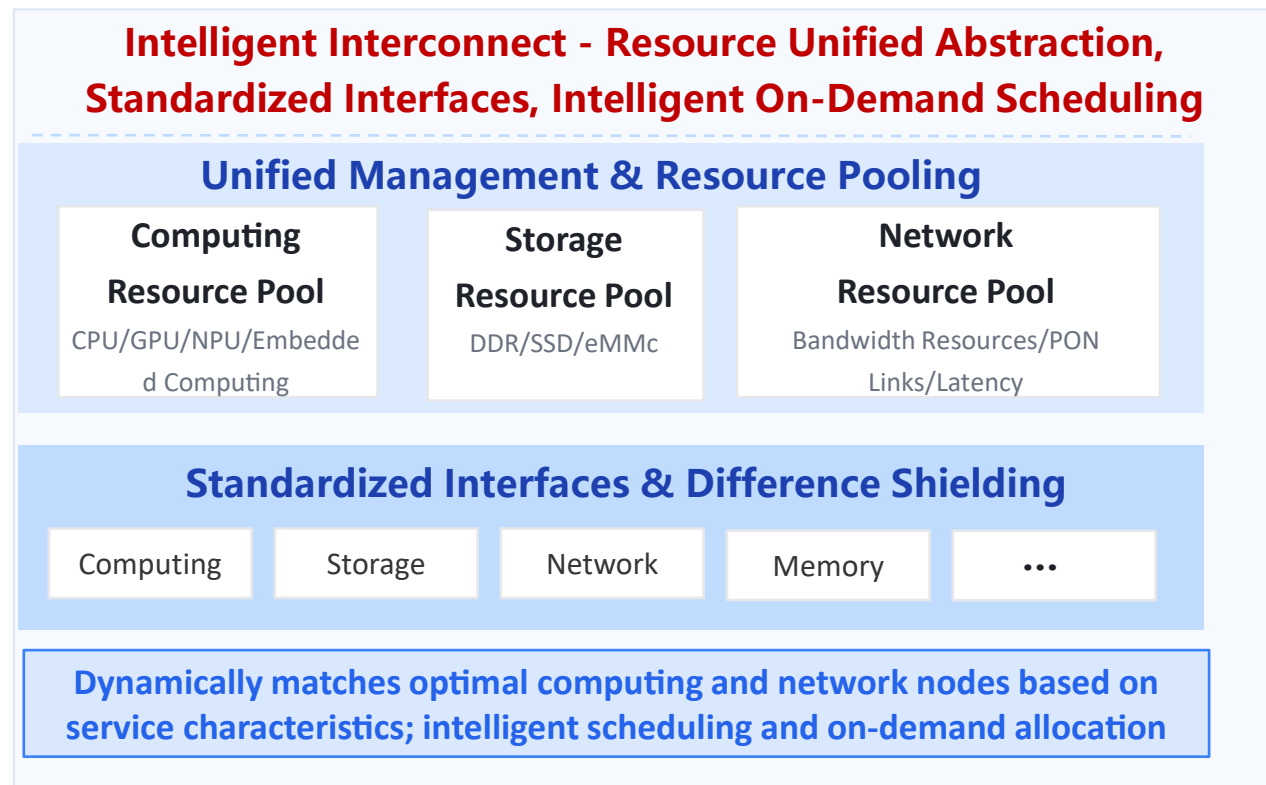
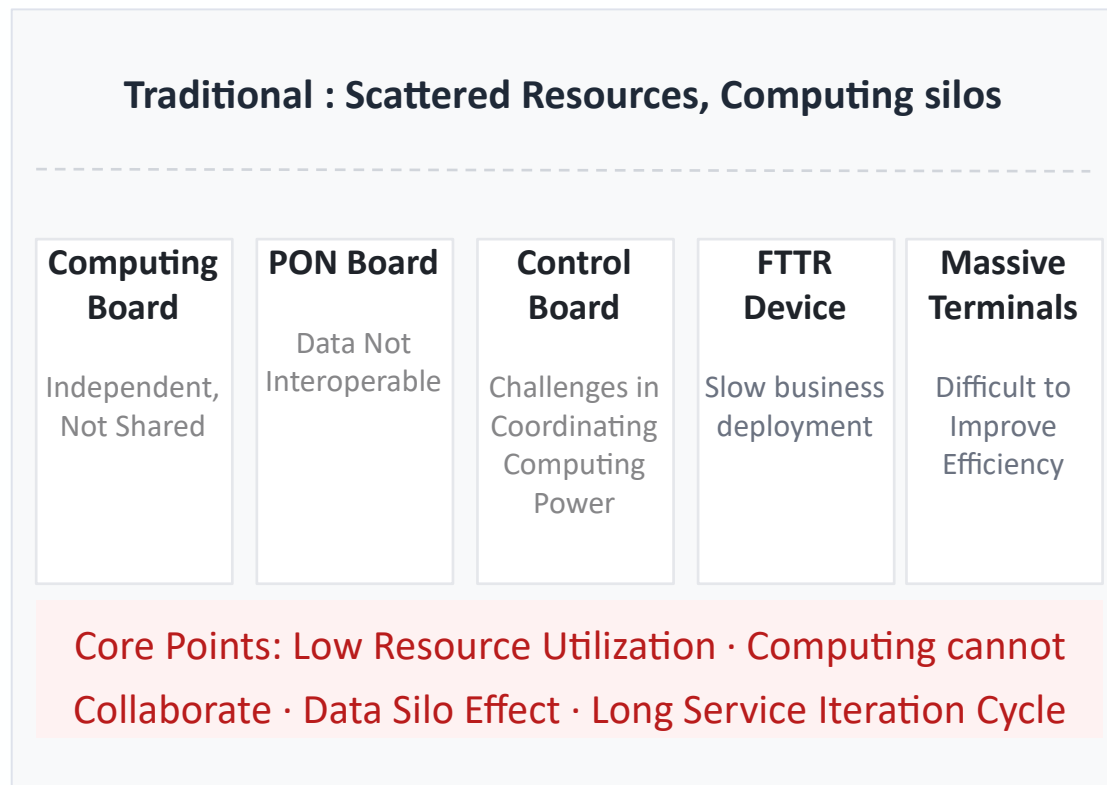
General Strategy for the Intelligent Evolution of OAN

As the next 5 to 10 years unfold, AI presents a strategic opportunity for the development of optical access network standards, technologies, and the industry



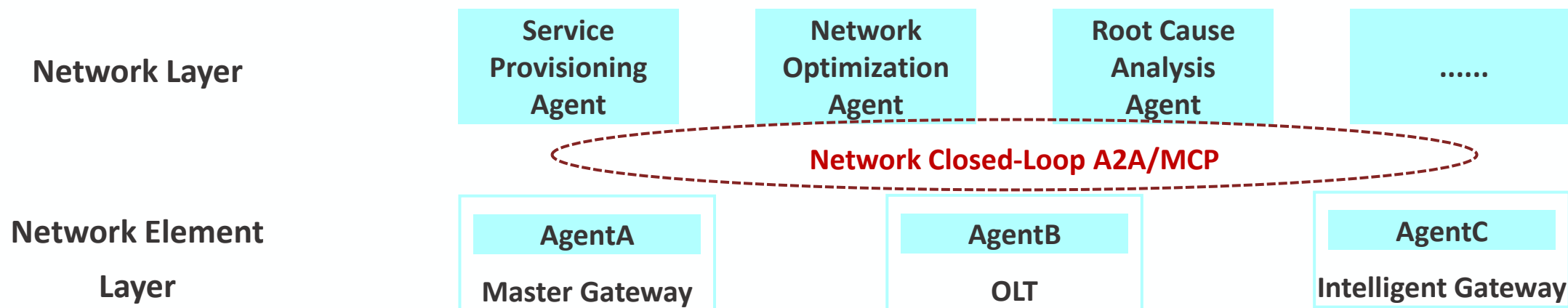
1、Resource Allocation and Interconnection

- Unifies and abstracts the computing, networking, and storage resources scattered across the OLT (computing boards, PON line cards, and main control boards) and FTTR devices
- breaking down physical boundaries to form a globally shared resource pool (in OAN) that is physically distributed yet logically accessible
- enabling elastic allocation of computing power and open, interoperable data exchange



2、AI-Empowered Autonomous Capability Enhancement

- Progressively build functional intelligent agents at the network element layer, including
 - automatic service activation, traffic forecasting, OLT energy efficiency optimization, real-time service KQI analysis, and real-time physical-layer optimization of Wi-Fi and optical links, etc.
- At the network layer, support cross-network-element, multi-agent collaborative orchestration based on the intelligent agent protocol to enhance the autonomous intelligence capabilities of optical broadband networks

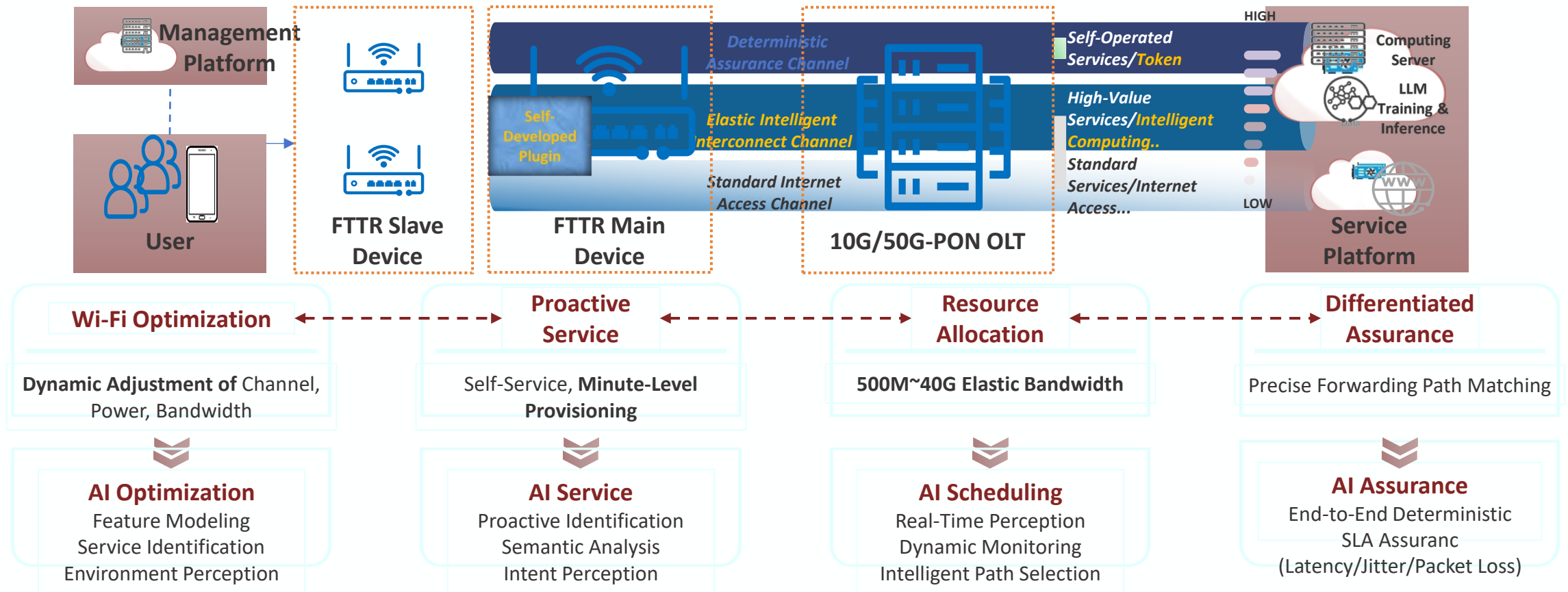


Master-Slave Multi-Agent Collaboration Model

Based on Semantic A2A Protocol Agent Interaction Orchestration

3、Service Intelligence: Elastic Intelligent Interconnect

- Building elastic intelligent interconnection links and deterministic assurance channels, based on cooperation between edge-side plug-ins and OLT agents
- Providing proactive service awareness, elastic resource allocation, and tiered, differentiated assurance capabilities for new businesses



Towards the Rapid Development of the Smart Era, looking forward to Continuous Collaboration