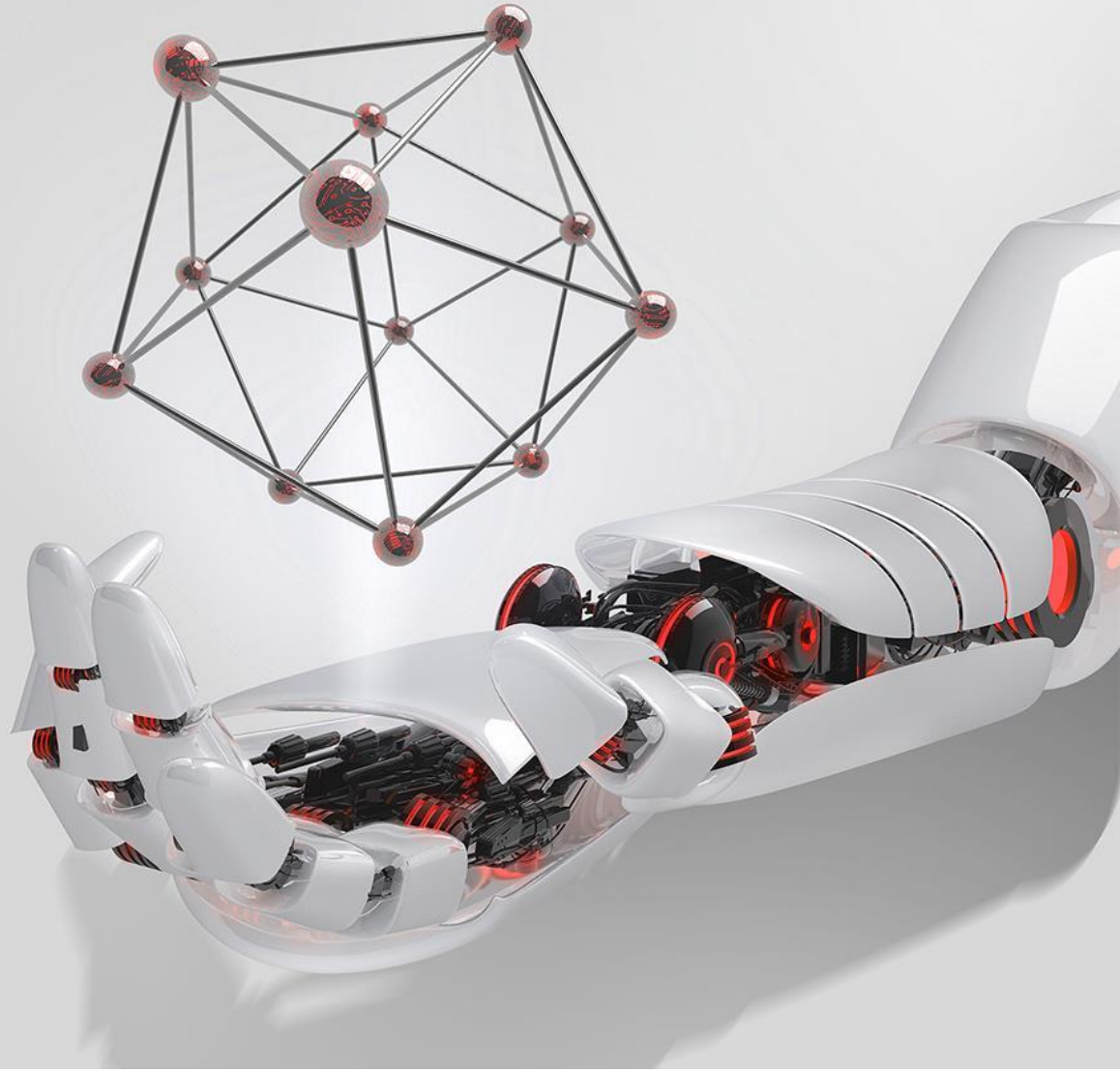
New IP

The Protocol Framework towards a Fully Connected, Intelligent World

Huawei 2012 Network Technology Lab



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Use cases and requirements for future networks towards 2030

- New media supported use cases
  - Holographic type communications
  - Ultra-realistic immersive VR
  - Digital avatar
  - Etc.
- New or enhanced network capability enabled use cases
  - Flexible addressing
  - New transport capability
  - Usable security
  - Computing and networking convergences
- New or enhanced vertical industries and applications
  - Industrial applications
  - Tele-medical applications
  - Smart agriculture
  - Space-terrestrial integrated network
- Other use cases from workshop presentations
  - Smart city
  - Future smart IoT applications
  - Beyond IP: Network Protocols to Meet the Demands of 203

From "NET2030-O-025 Sub-Group 1 interim deliverable on "Use cases and requirements for future networks towards 2030"

New services and capabilities for Network 2030

- Network 2030 Services: Foundational Services
  - In-time and on-time services
  - Coordinated services
  - Qualitative Communication Service
- Network 2030 Services: Compound Services
  - Haptic communications
  - Holographic-Type Communications (HTC) Services
- Other Aspects and Capabilities of Future Networking Services
  - Network Service Interfaces
  - High Programmability and Agile Lifecycle
  - Manageability
  - Security
  - Resilience
  - Privacy
  - Trustworthiness
  - Accounting, accountability, validation of delivered services

From "NET2030-O-027 New Services and Capabilities for Network 2030: Description, Technical Gap and Performance Target Analysis"

Focusing on key requirements of some typical Network 2030 use cases, New IP aims to enhance traditional IP capabilities to meet new requirements.

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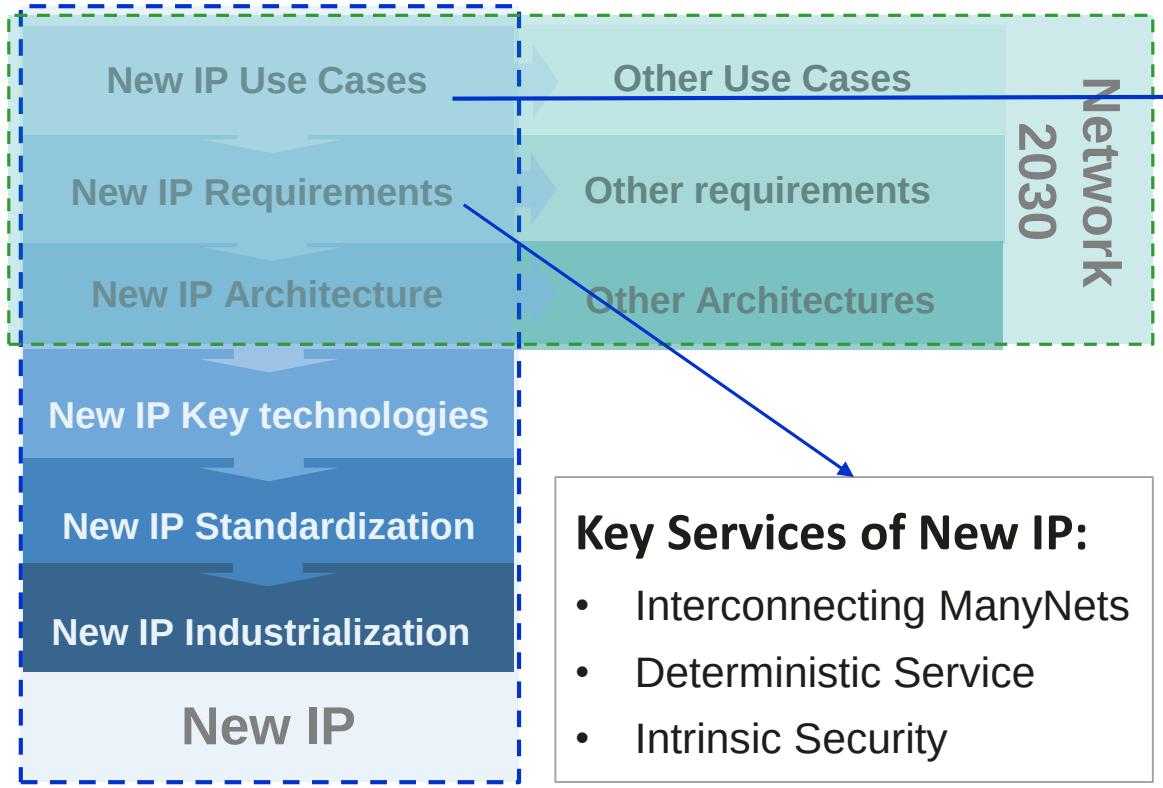
New IP Technologies Supporting Scenarios and Services in Network 2030

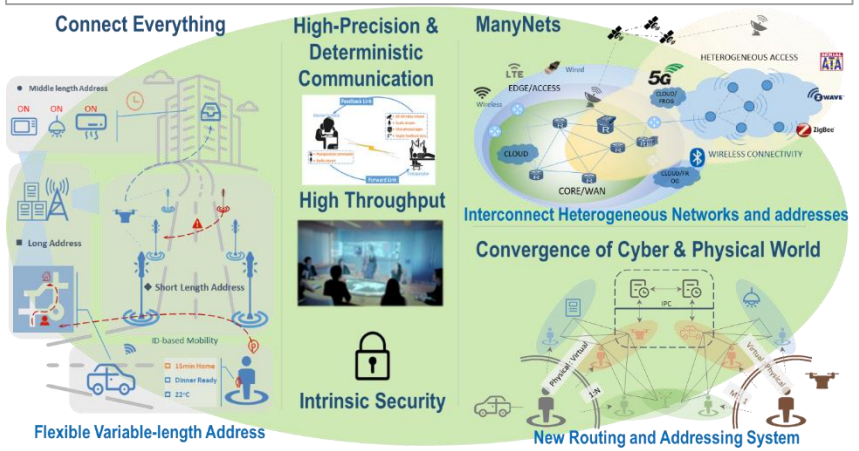


Typical Scenarios of New IP:

- Industrial Networks
- Cyber-Physical communication
- Holographic communication

Key Services of New IP:

- Interconnecting ManyNets
- Deterministic Service
- Intrinsic Security



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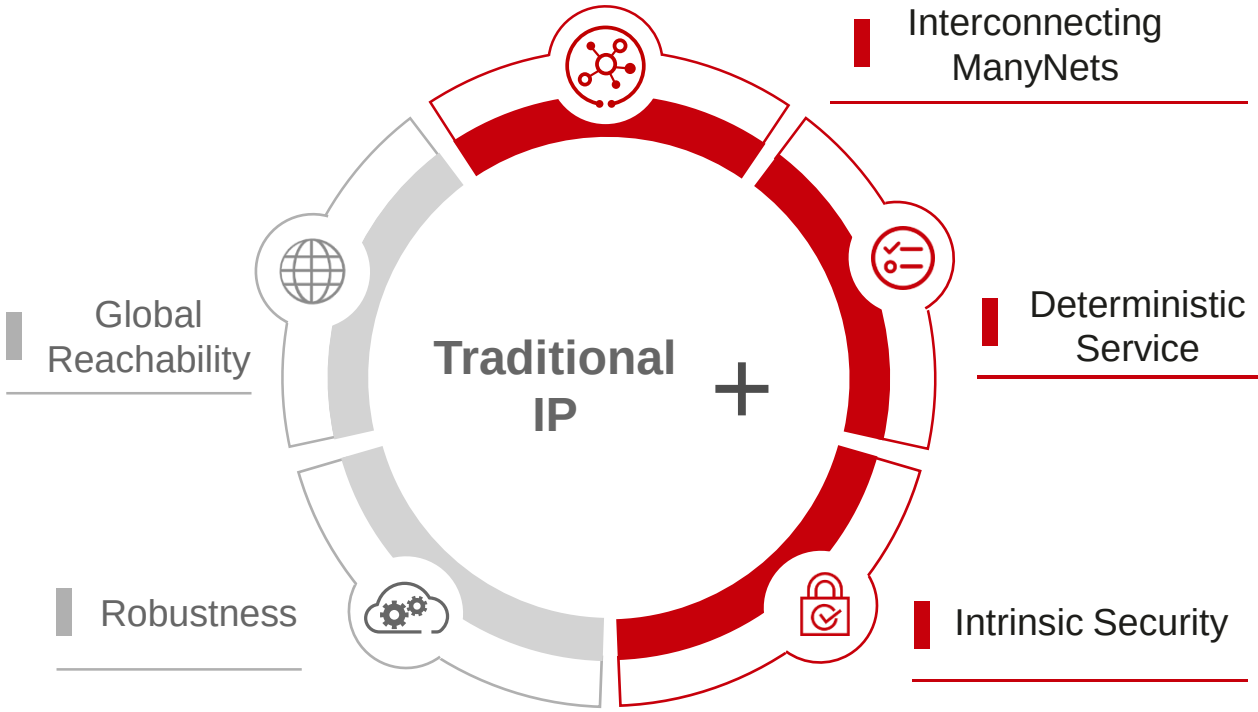
New IP - The Unified Protocol Framework towards a Fully Connected, Intelligent World



IP technology needs to continue to develop on the basis of inheriting successful genes.

- ✓ Flexible variable-length address to interconnect diverse heterogeneous networks
- ✓ Loc/ID separation to support multiple semantics addressing
- ✓ New transport layer to achieve ultra-high Throughput

- ✓ Guarantee both the upper bound and lower bound of end-to-end forwarding latency
- ✓ Precise transmission with low latency, low jitter

- ✓ Authentication of source ID/Locator
- ✓ Trade off between Privacy and Accountability
- ✓ Guaranteed key exchange security
- ✓ DDoS attack defense

= New IP

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New IP Demonstration

Location: Outside the Auditorium Caeano Pereira (floor 0)

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