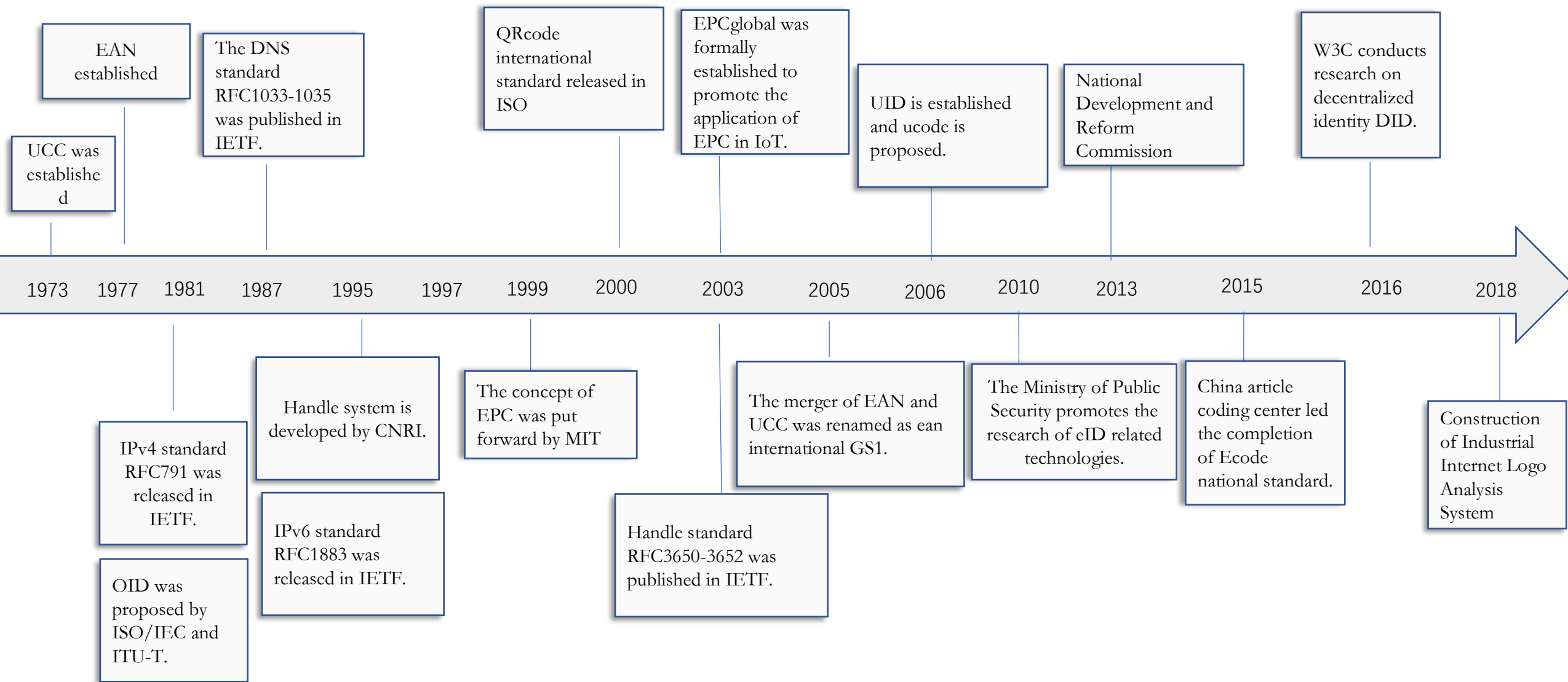




The Impact of Network Identification Technology on DNS

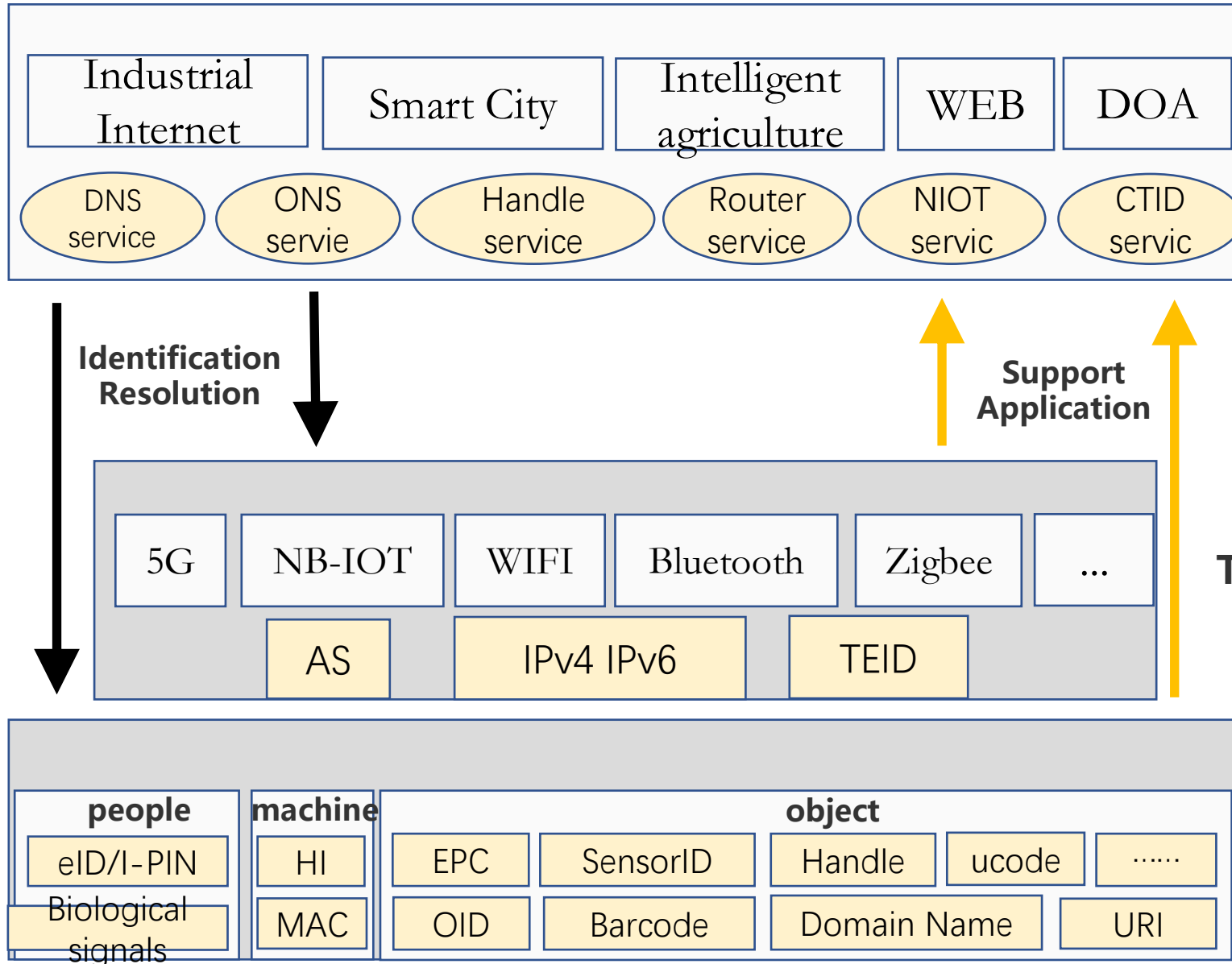
Zechen Cui
China Internet Network Information Center (CNNIC)
September, 2024

Development Course Of Network Identification





I E T F®



New technology

Blockchain

Edge/Fog Computing

ICN

SDN

AI

.....

Traditional identification technology

EPP

HIP

DNSSEC/DANE

RPKI

RFID

.....

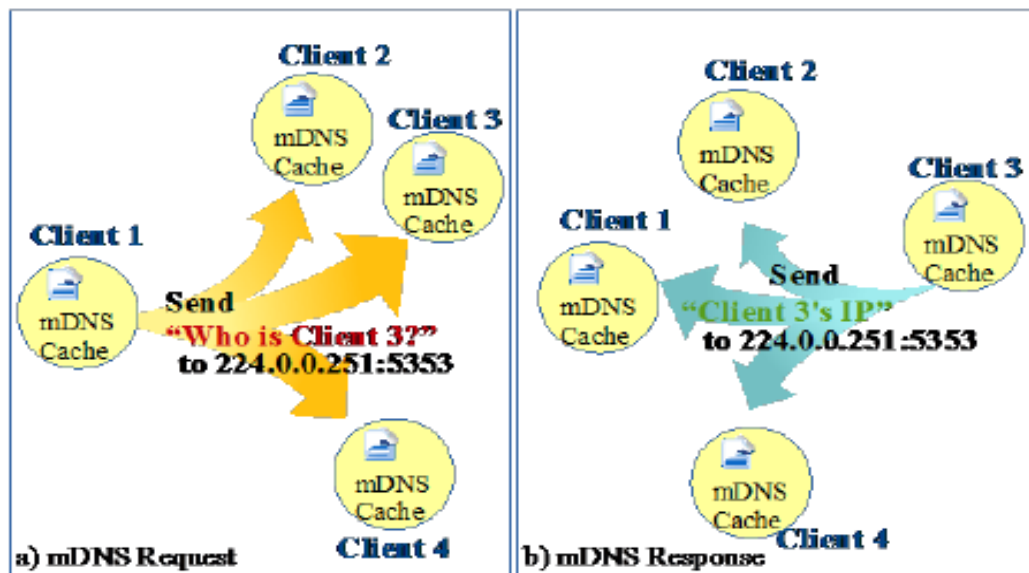


- From the Identification, DNS namespace can be expanded to support the huge demand for Internet of Everything Identification.
- From the protocol, it has a complete protocol system, and it still needs application-driven protocol extension.
- From the facilities, a global, large-scale and service-oriented operation and maintenance management infrastructure has been built.

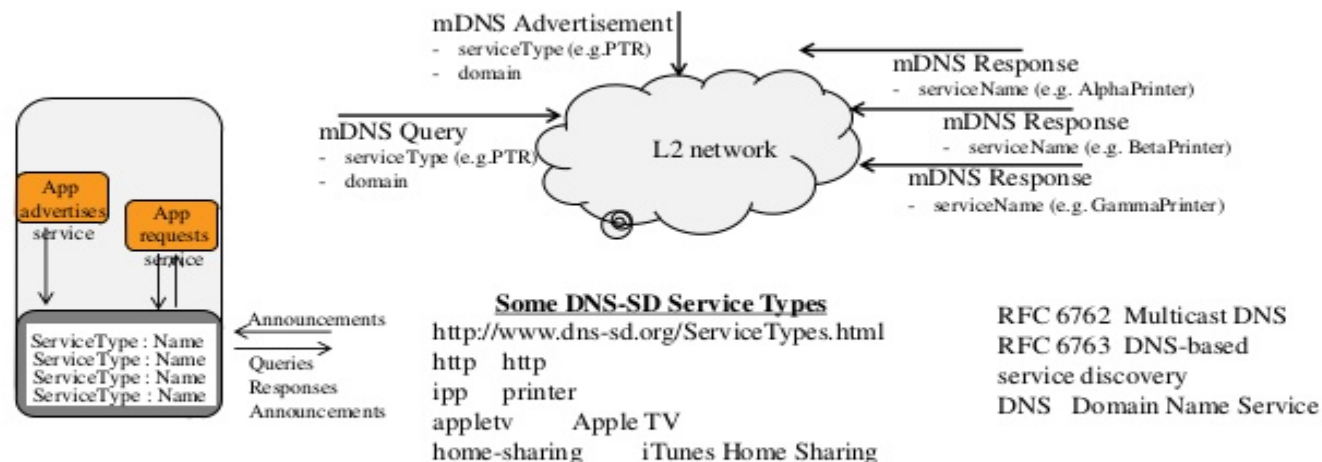
4

Opportunities — Infrastructure Independence

Authoritative vs. Recursive DNS



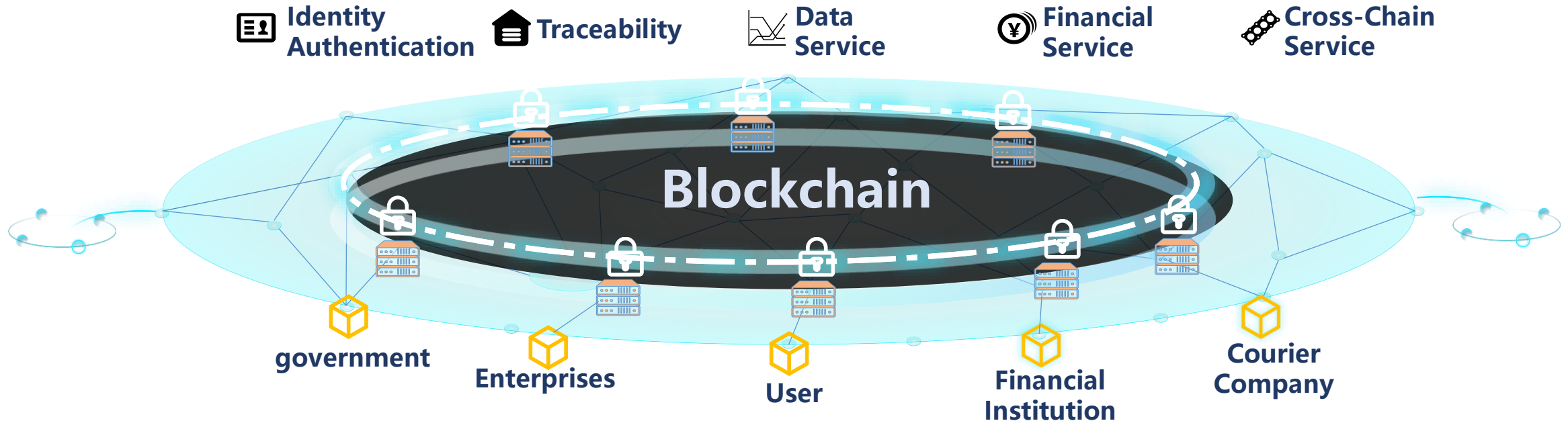
mDNS and DNS-SD



When a new service instance starts, it advertises the service to a multicast address with serviceType and serviceName. Listening devices add the service to their cached list. When an app requests a service by serviceType queries the OS-cached list for optional mDNS Query for the serviceType. When an app wants to use a service, mDNS Queries resolve the chosen serviceName to a hostName and IP address + port

How to work in a cross-link scenario?

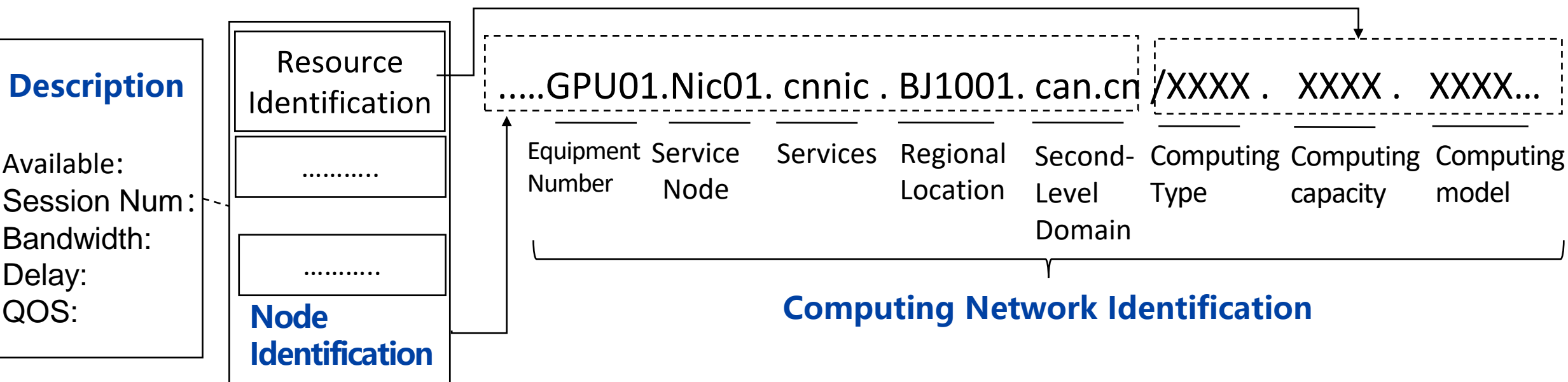
Opportunities — Blockchain



Blockchain Identification: A lot of entities participate in the blockchain network, smart contract ID, DID(Decentralized Identity) , blockchain node ID, wallet address, URL address, need to be identified.

Computing Resource Identification: Used to describe the key attributes of computing resources.

Computing Node Identification: Used to describe the provider or service node of computing resources (located at the machine).





Thank You Very Much!