

CIRA Labs

Secure IoT Registry

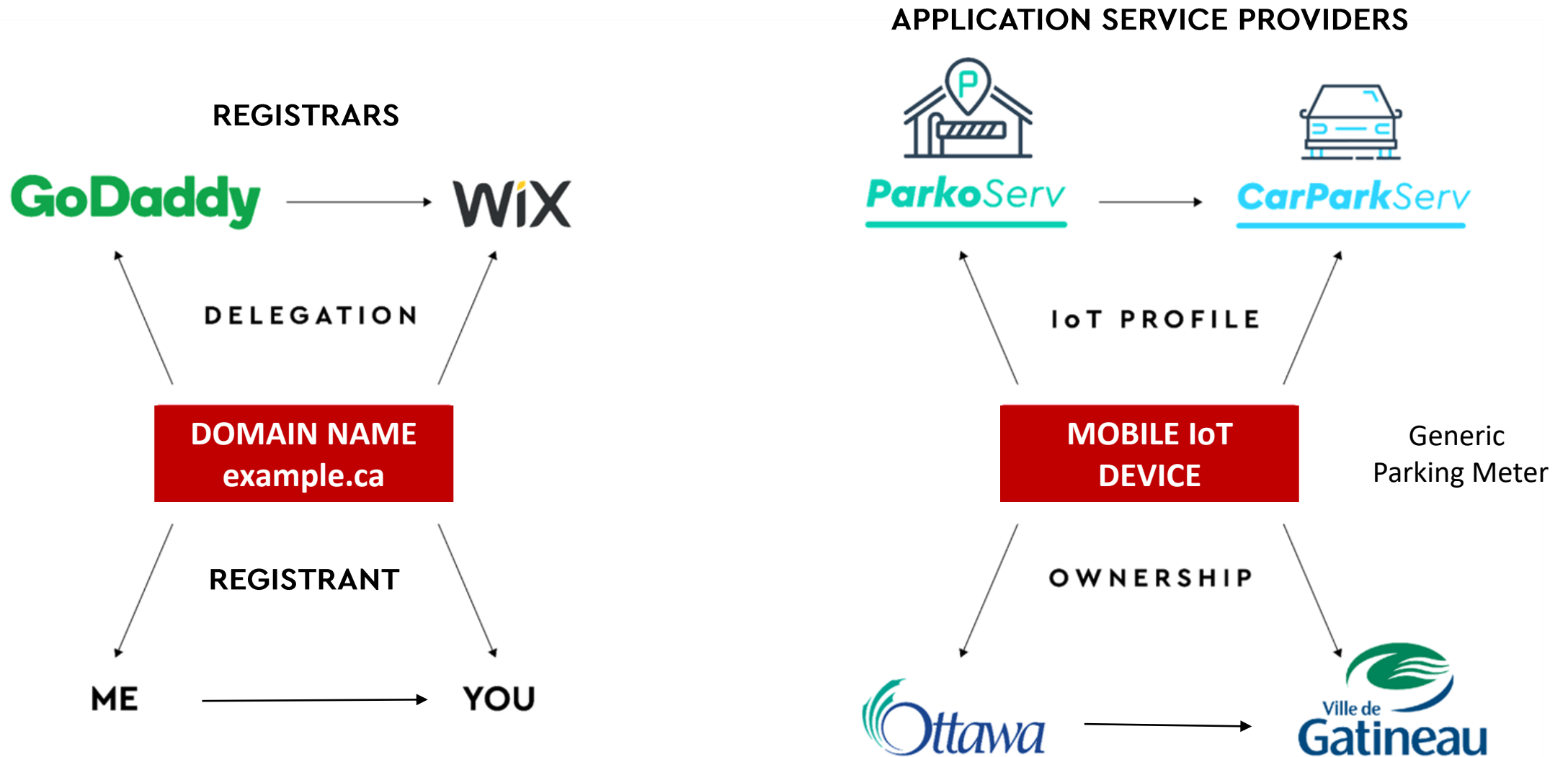
<https://cira.ca/IoT>

Presented by:
Jacques Latour
November 14, 2019

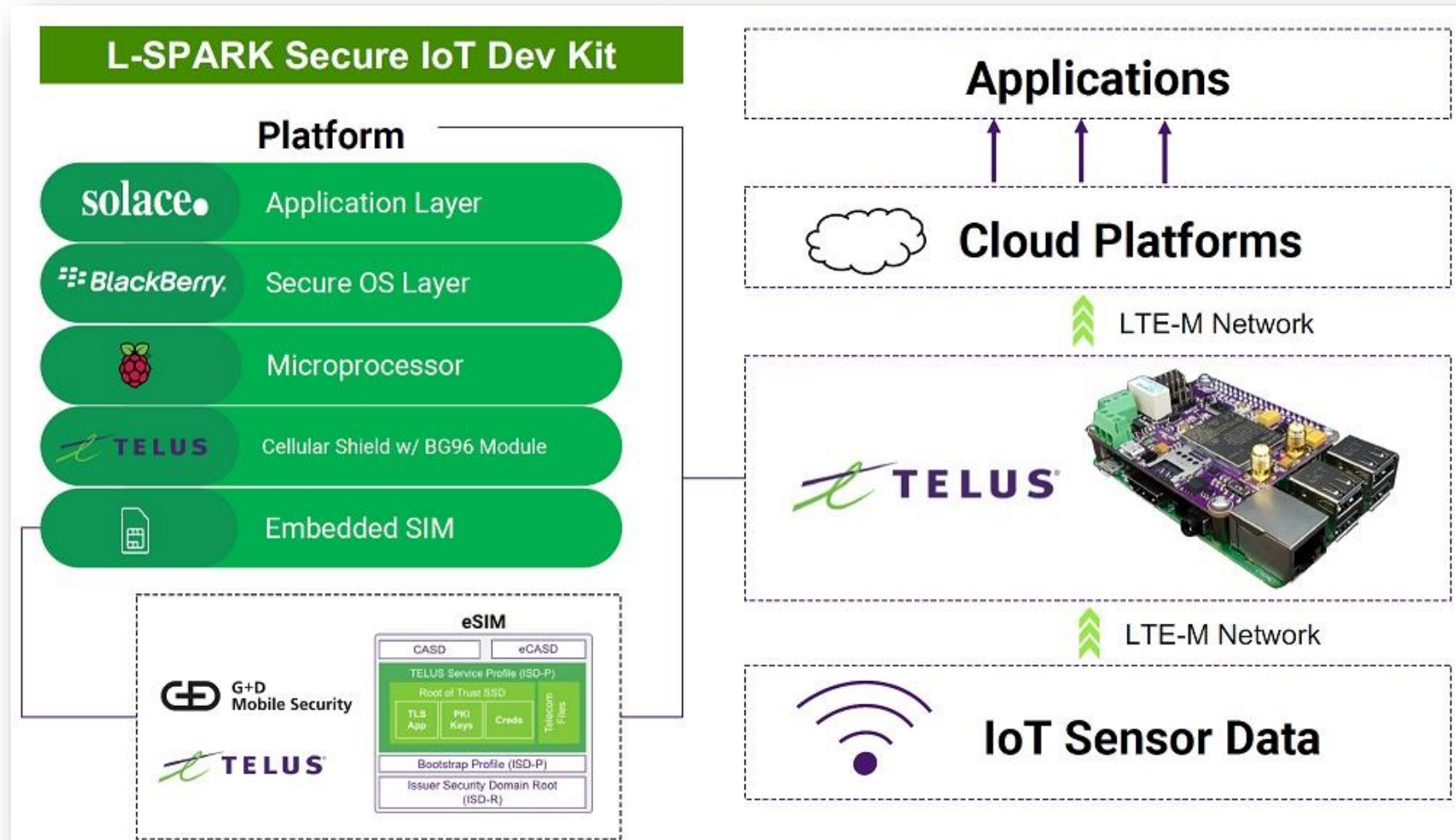
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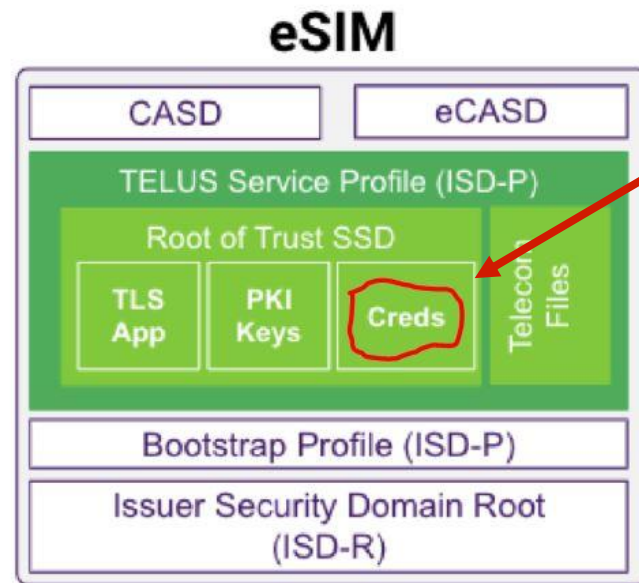
Similarity between Domain Names and IoT Devices



The enablers are eSIMs & MNO Service Profiles



Let's look at the eSIM & MNO Service Profile and how it can enable IoT Connectivity

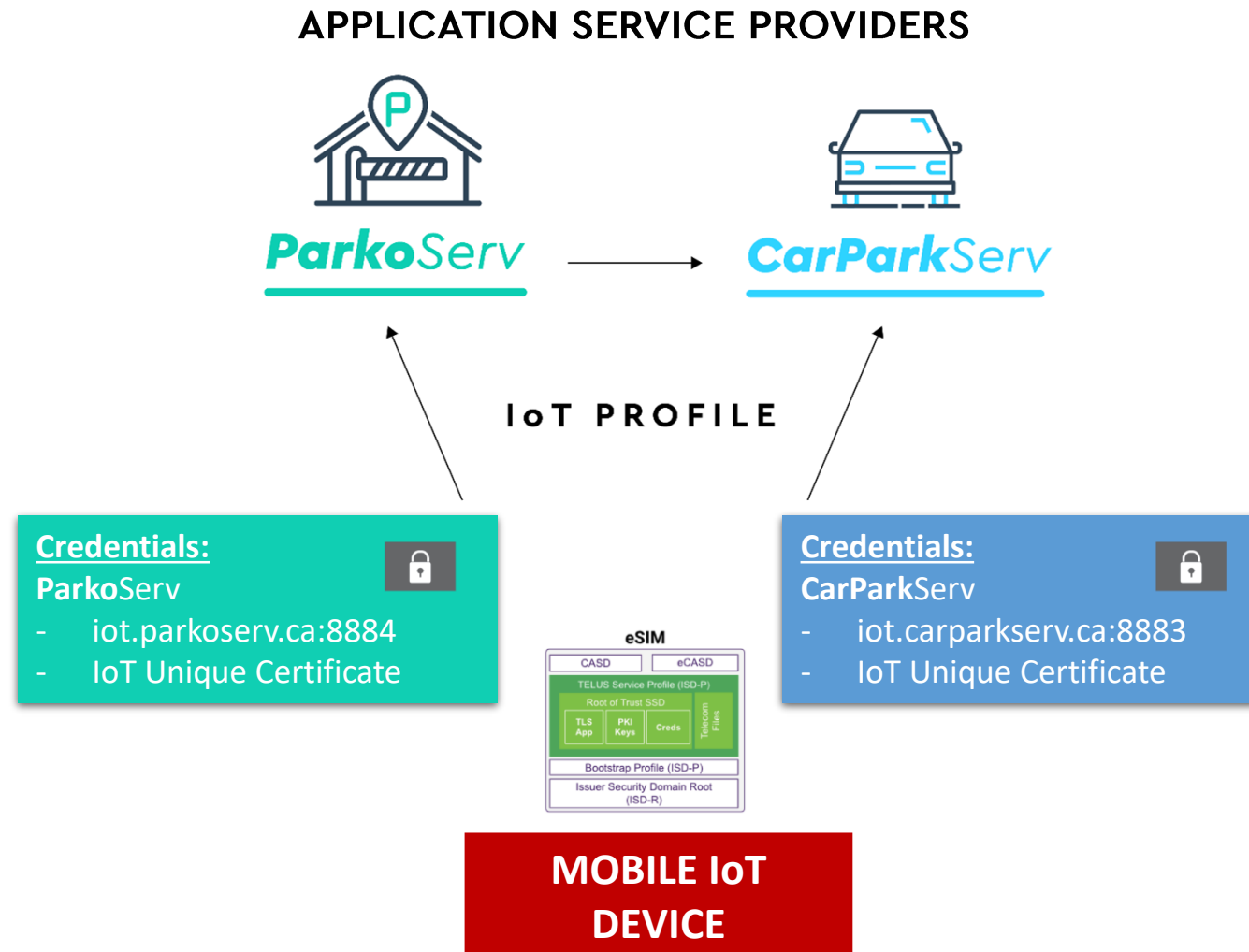


Downloadable Encrypted IoT Application Credentials

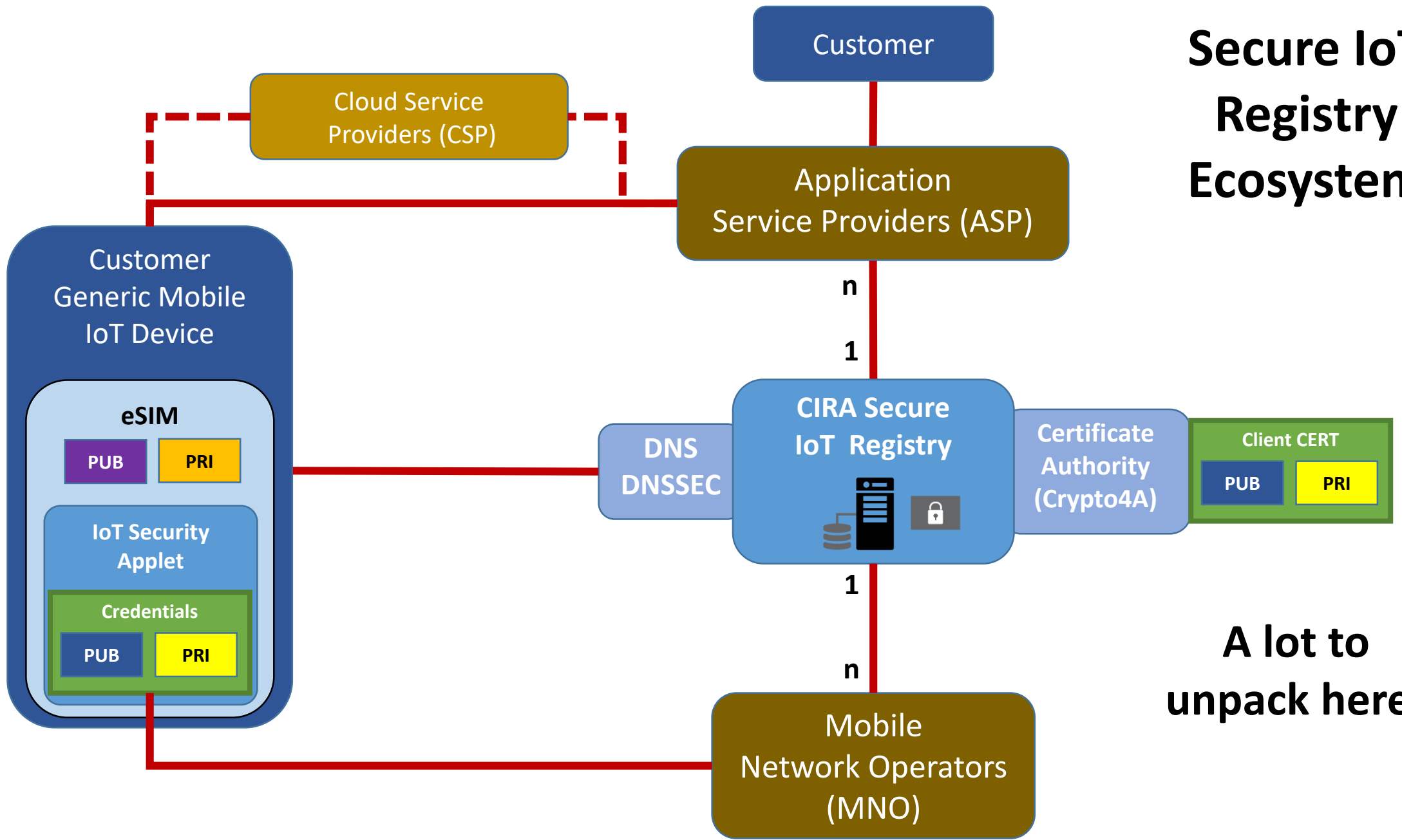
Application/Cloud Service Provider

- Domain name / URL
- Port Number
- IoT Unique Certificate

No more hardcoding IoT devices to CSP or ASP



Secure IoT Registry Ecosystem

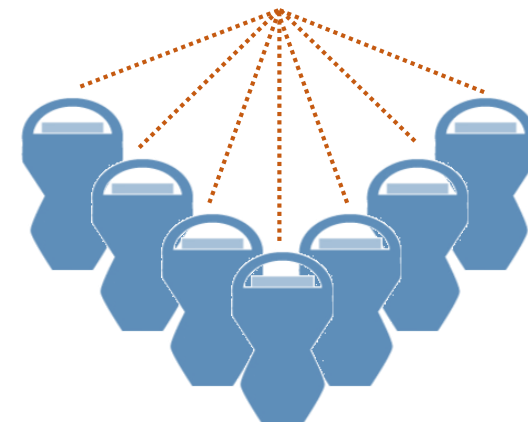


A lot to
unpack here!

**THE CITY OF OTTAWA BUYS
1000 GENERIC SMART
PARKING METERS AND
SELECTS PARKOSERV AS
CLOUD SERVICE PROVIDER**



ParkoServ



1 - Procurement:

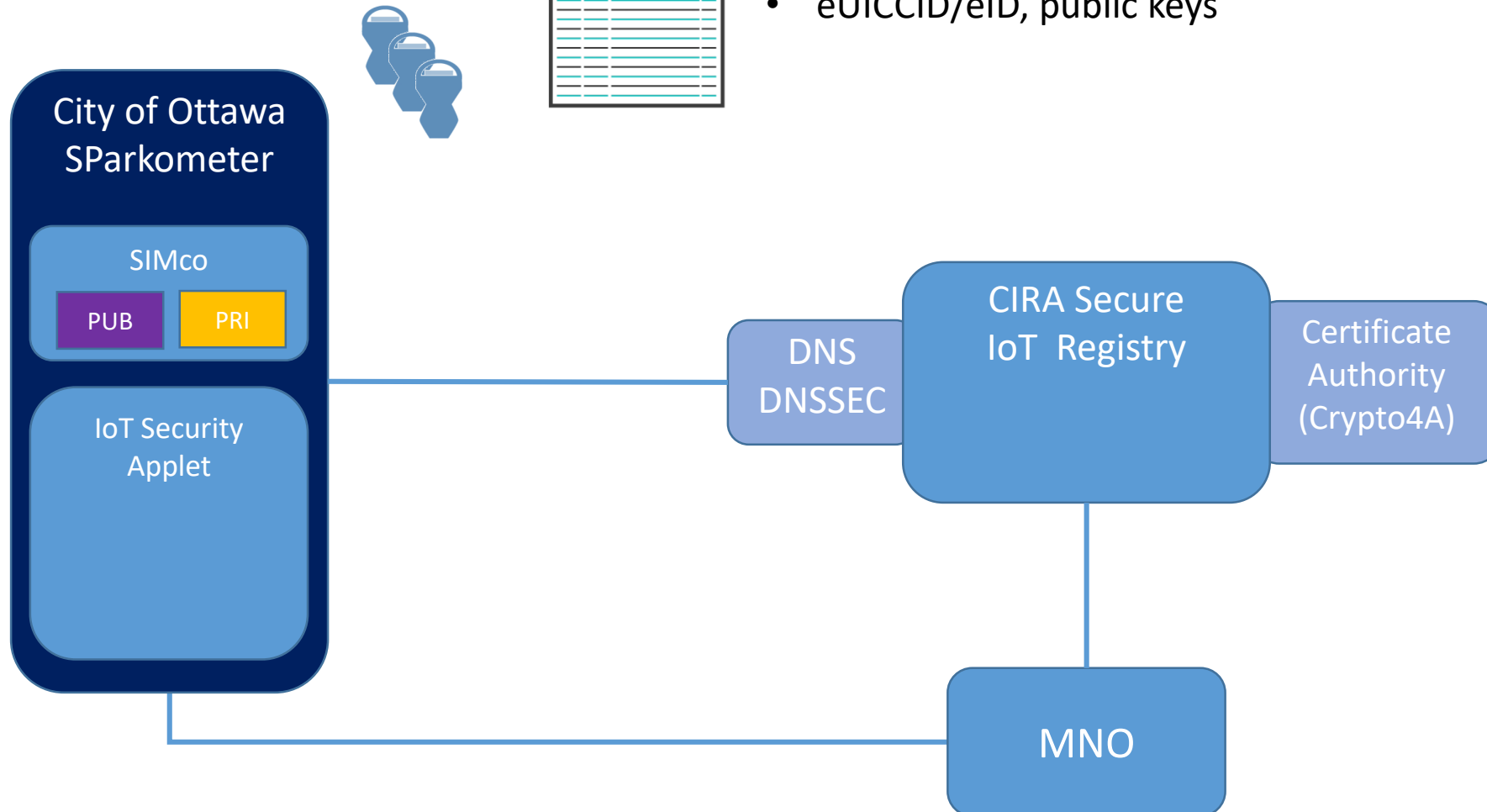
City of Ottawa buys 1000 SParkometers
(**generic** smart parking meters)

1

City of Ottawa

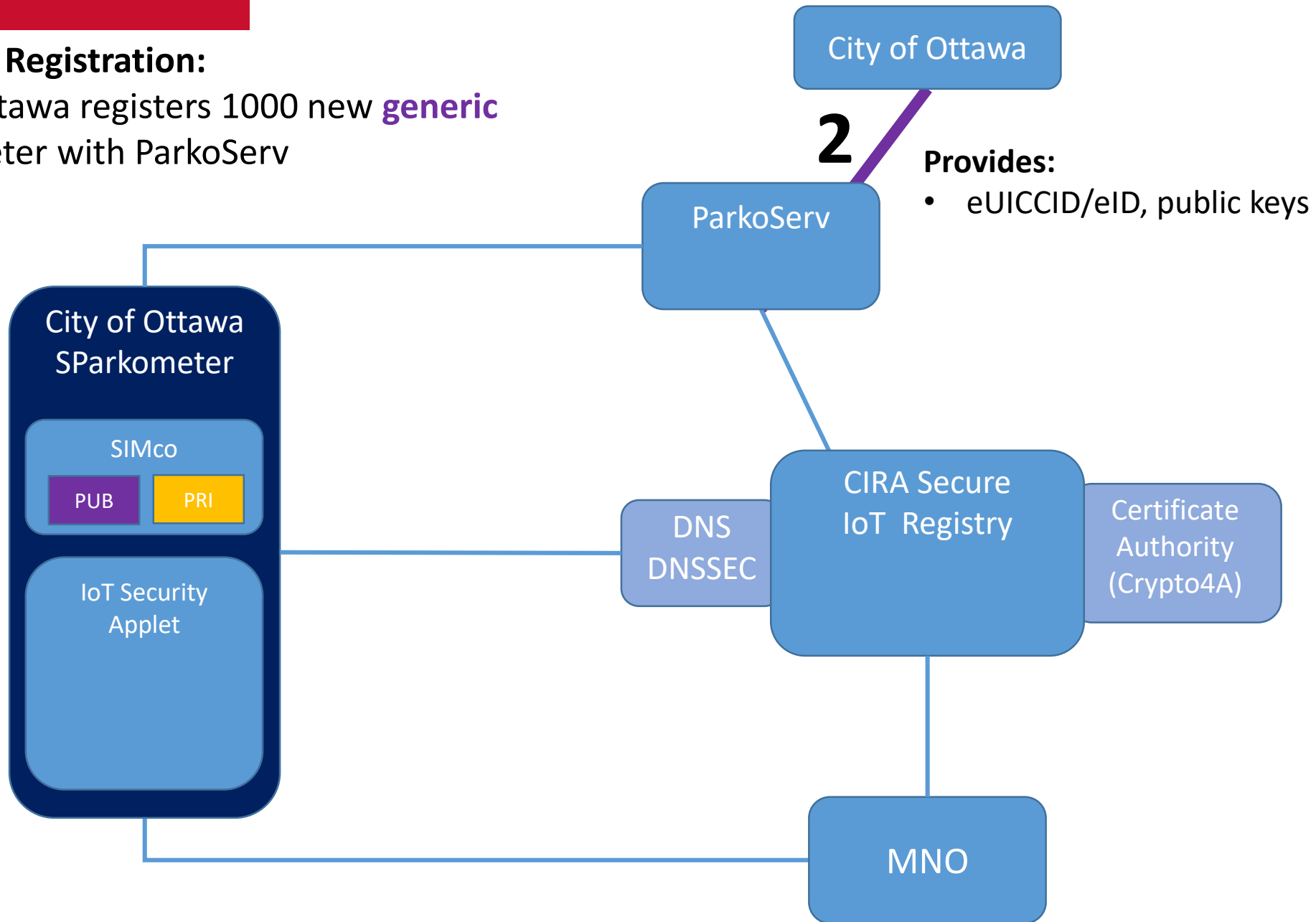
Provides:

- eUICCID/eID, public keys



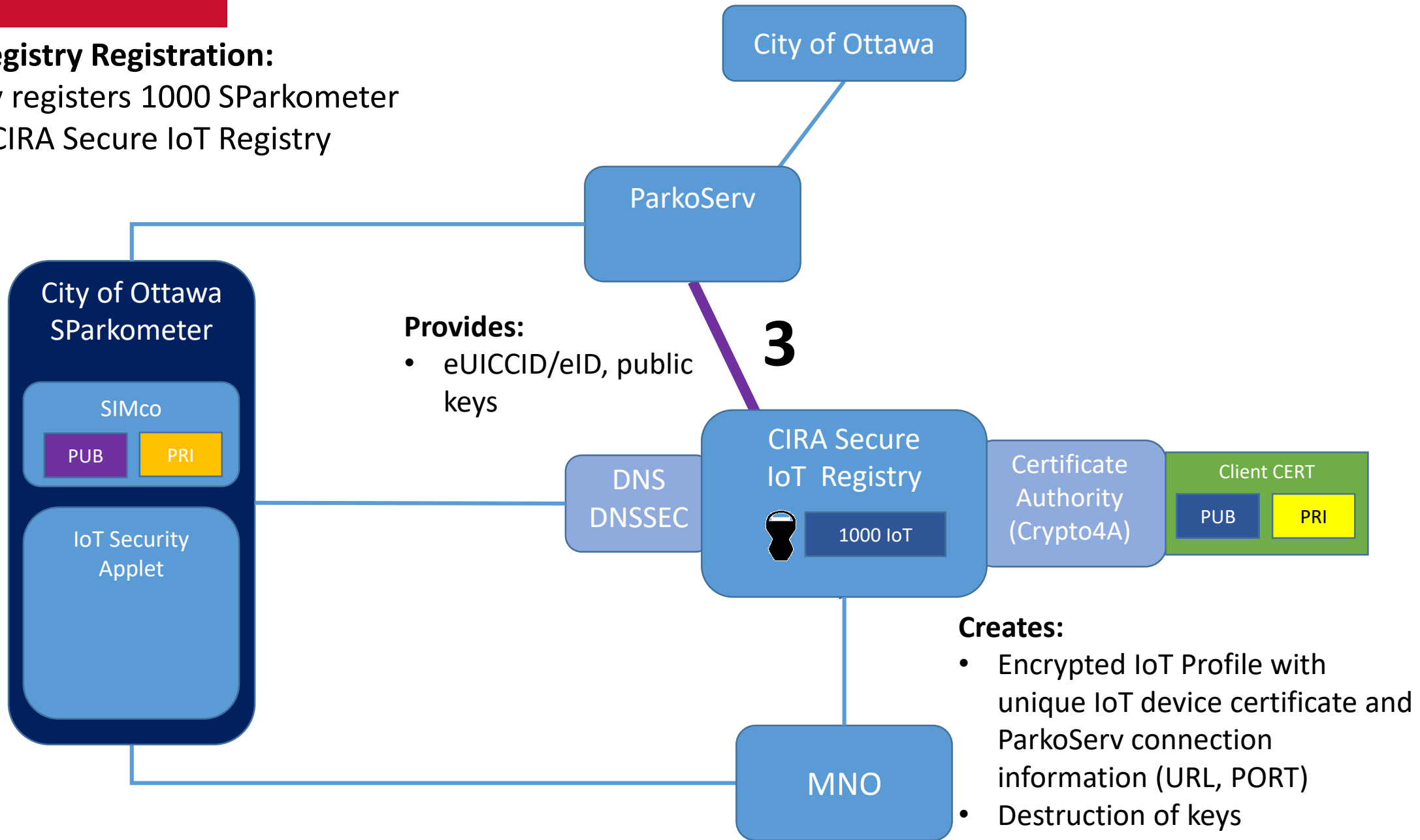
2 – Cloud Registration:

City of Ottawa registers 1000 new **generic** SParkometer with ParkoServ



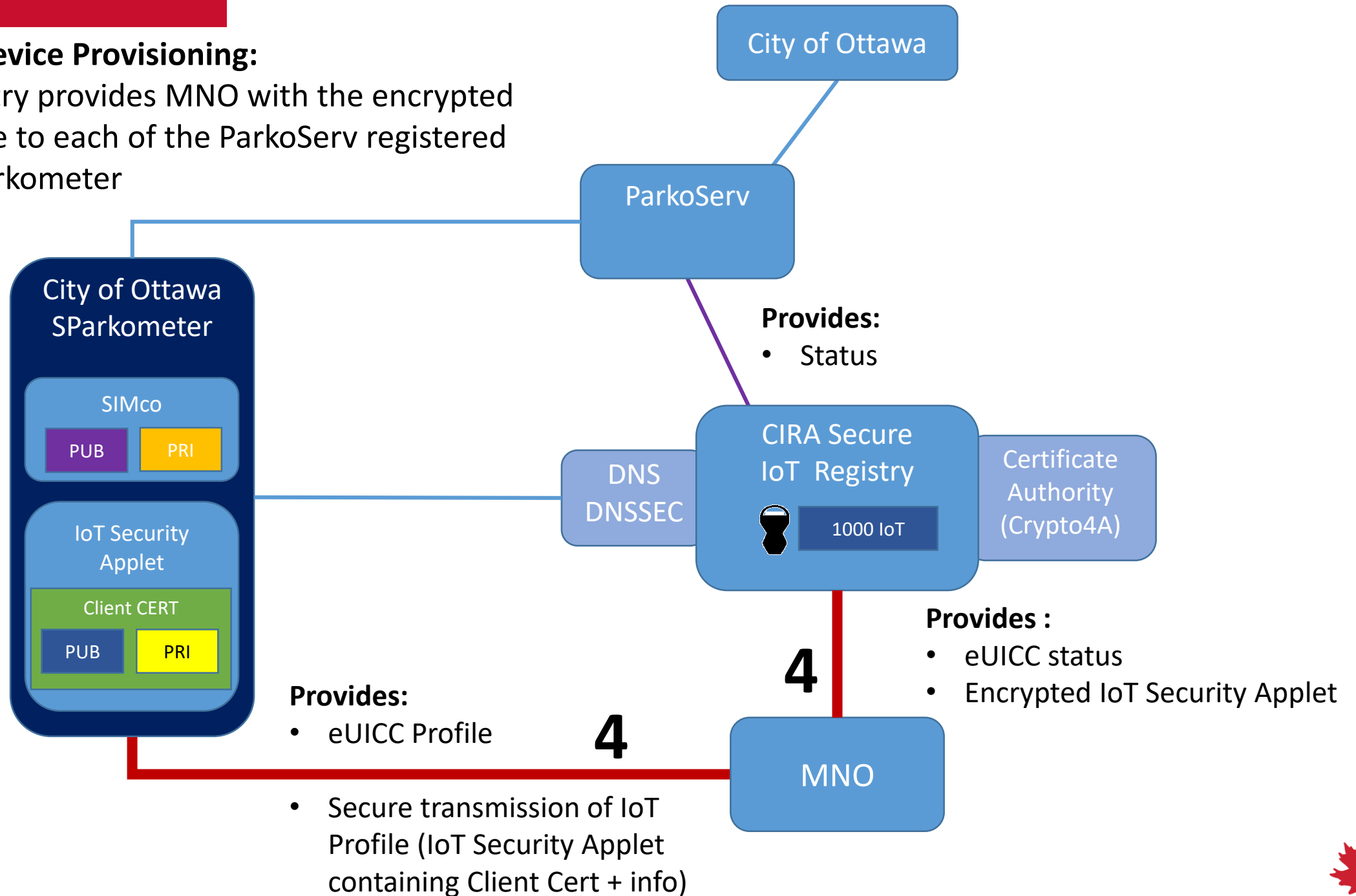
3 – IoT Registry Registration:

ParkoServ registers 1000 SParkometer with the CIRA Secure IoT Registry



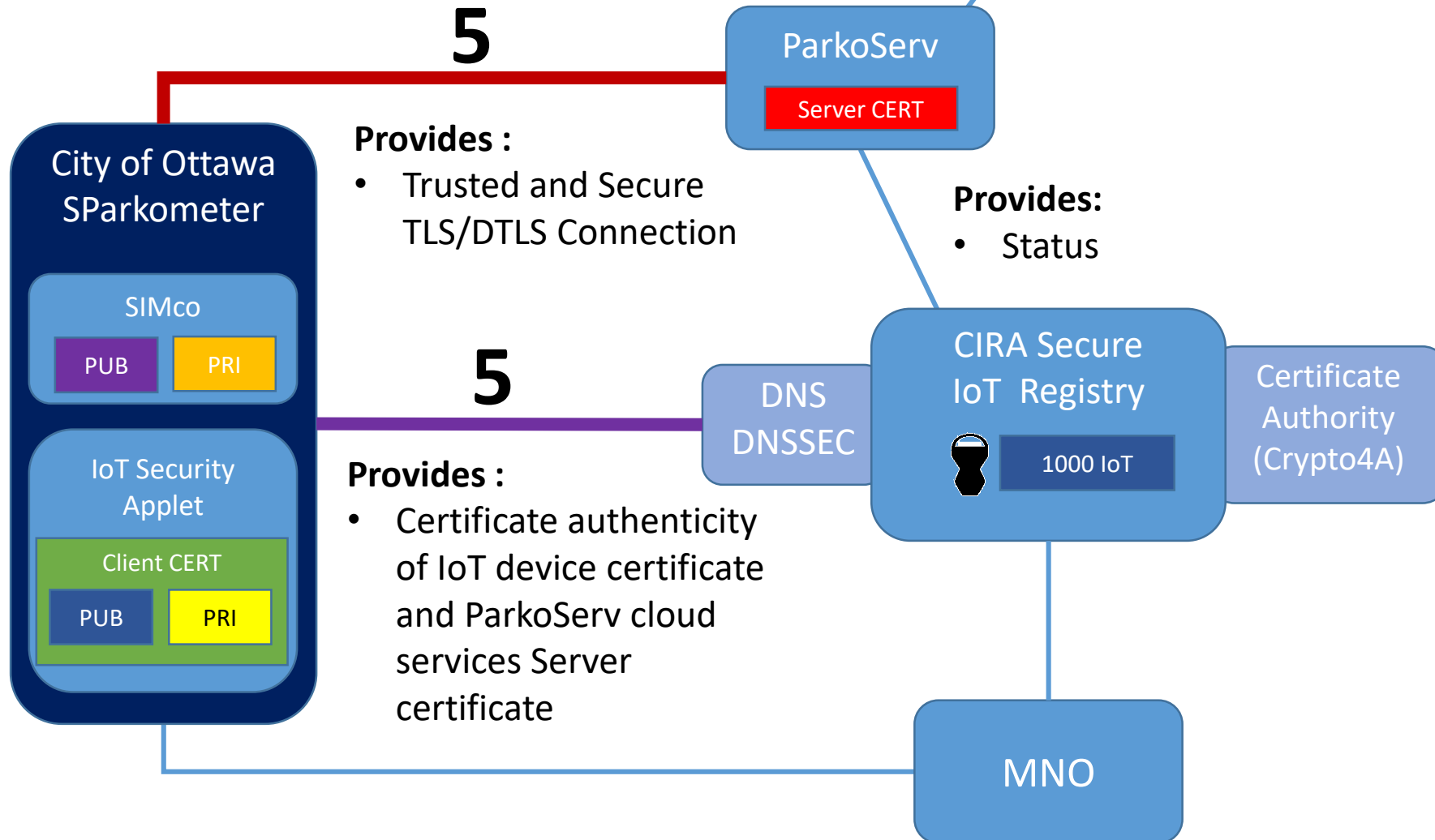
4 – IoT Device Provisioning:

IoT Registry provides MNO with the encrypted IoT Profile to each of the ParkoServ registered 1000 SParkometer



5 – ParkoServ Cloud Connectivity:

The SParkometer securely connect to the ParkoServ cloud service in a trusted manner

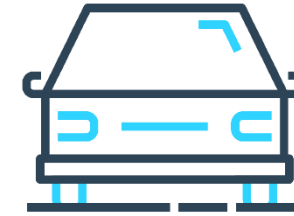
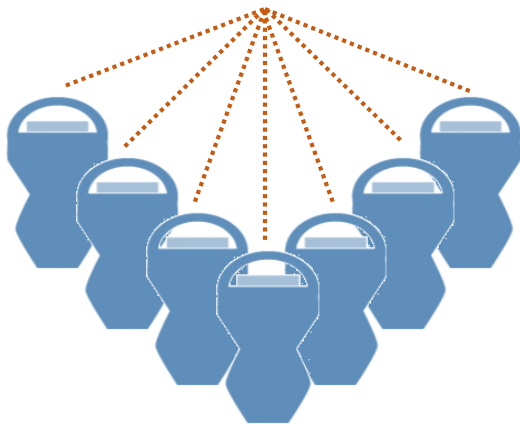




THE CITY OF OTTAWA CHANGES THEIR PARKING CLOUD PROVIDER



ParkoServ



CarParkServ

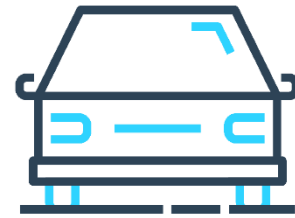




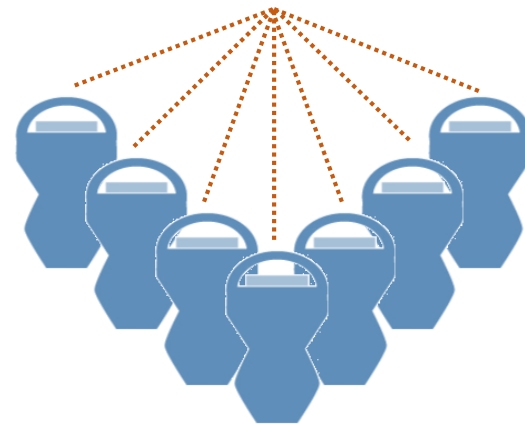
ParkoServ



 **Ottawa**

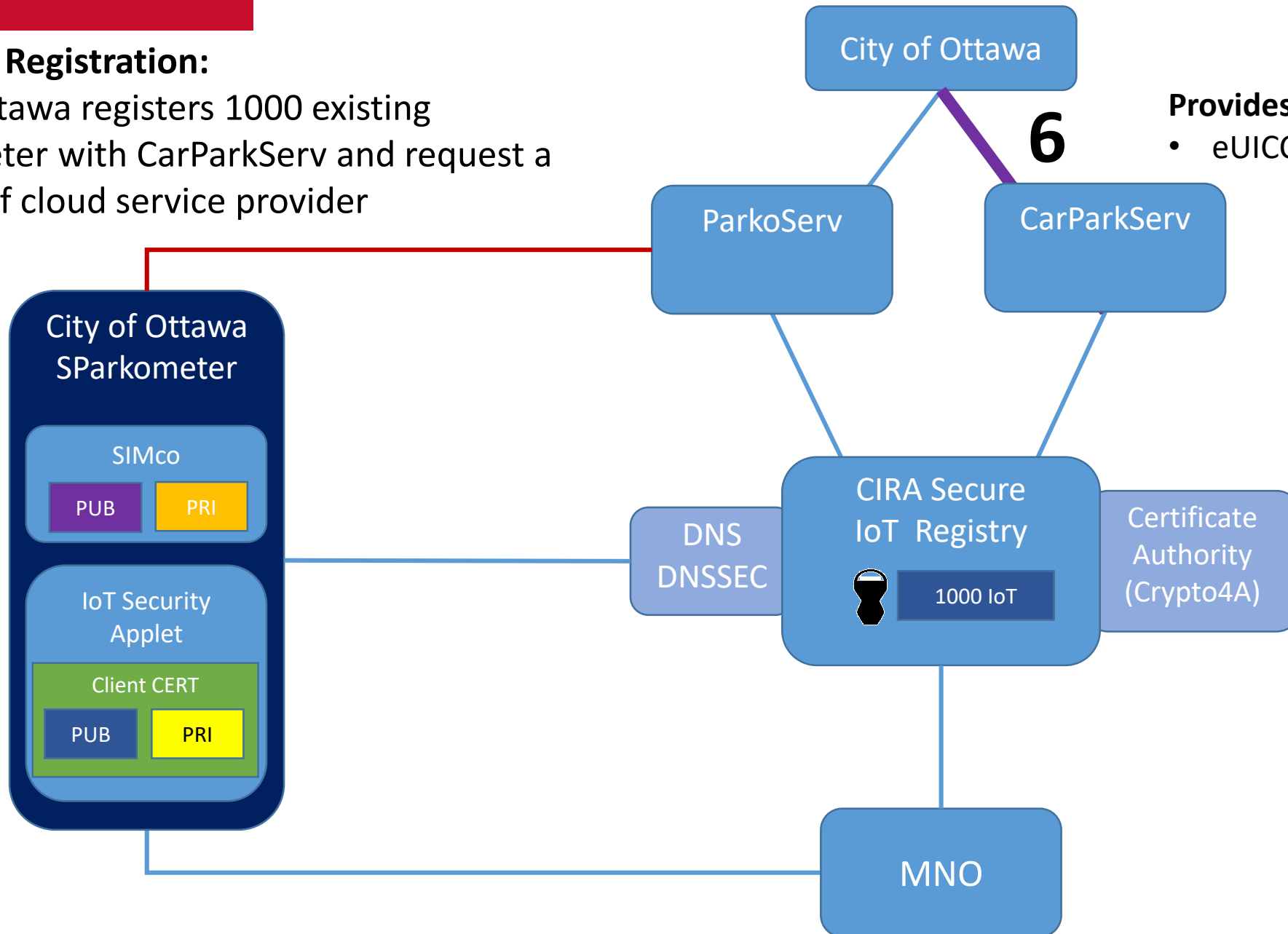


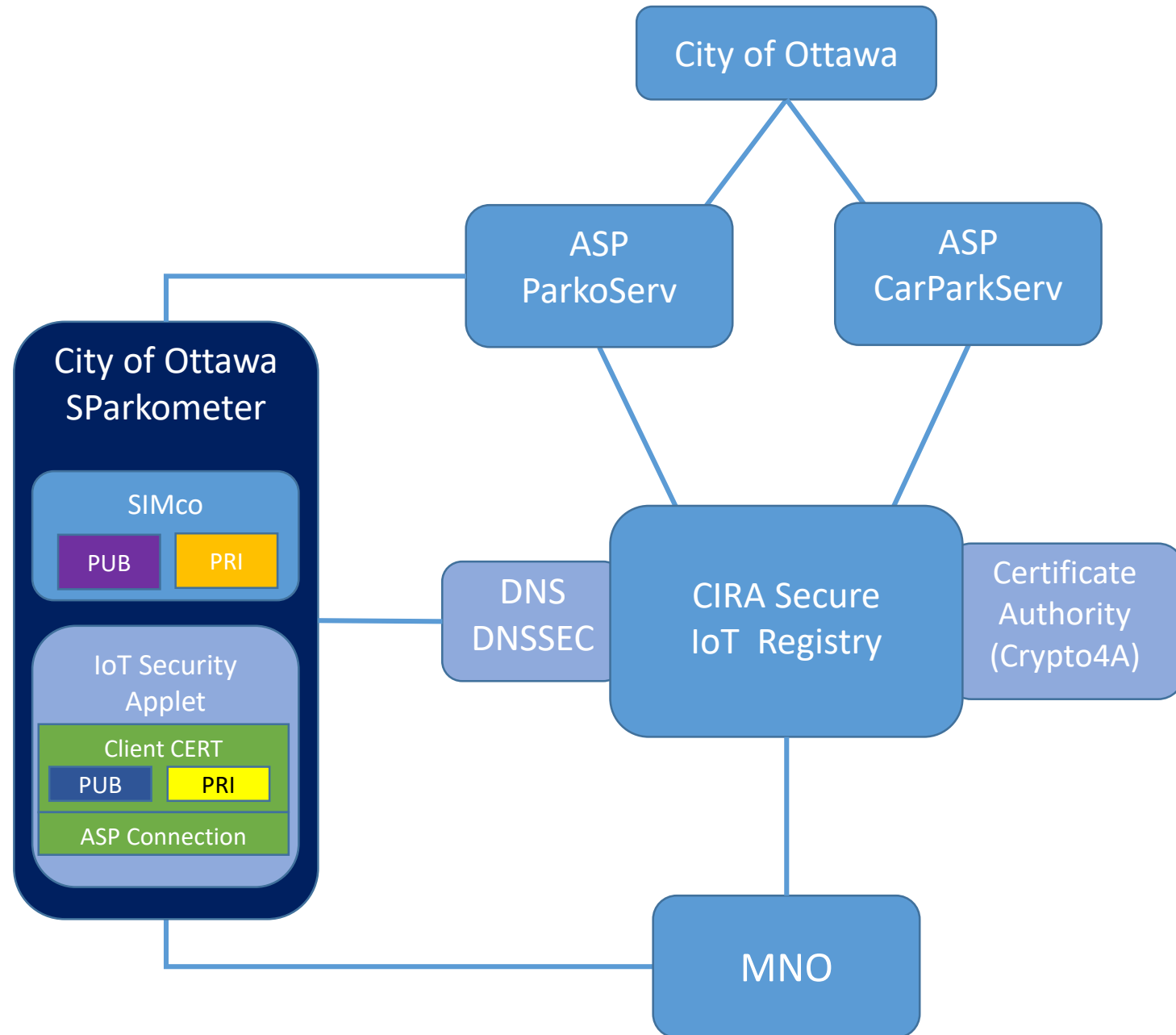
CarParkServ



6 – Cloud Registration:

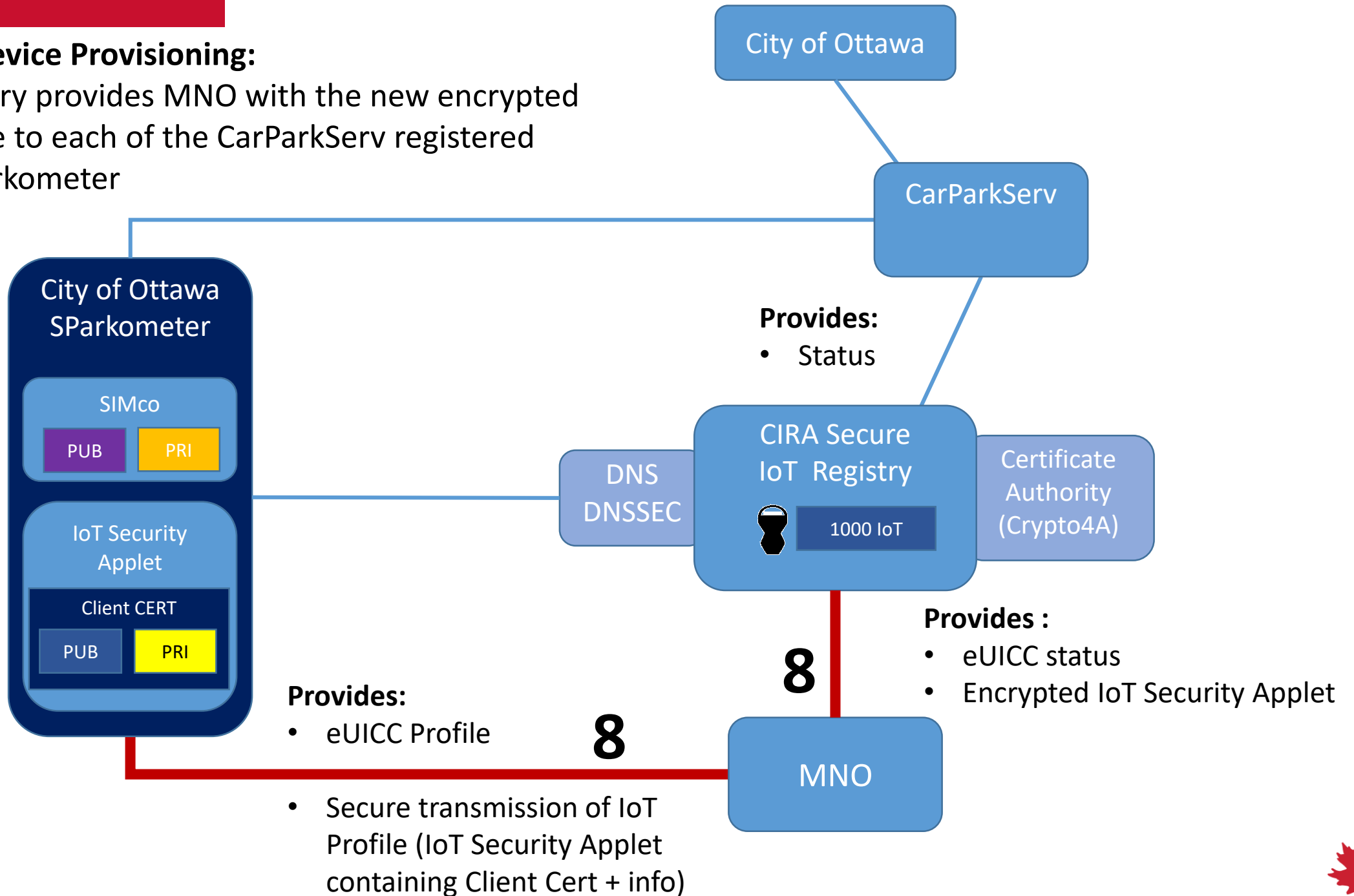
City of Ottawa registers 1000 existing SParkometer with CarParkServ and request a transfer of cloud service provider





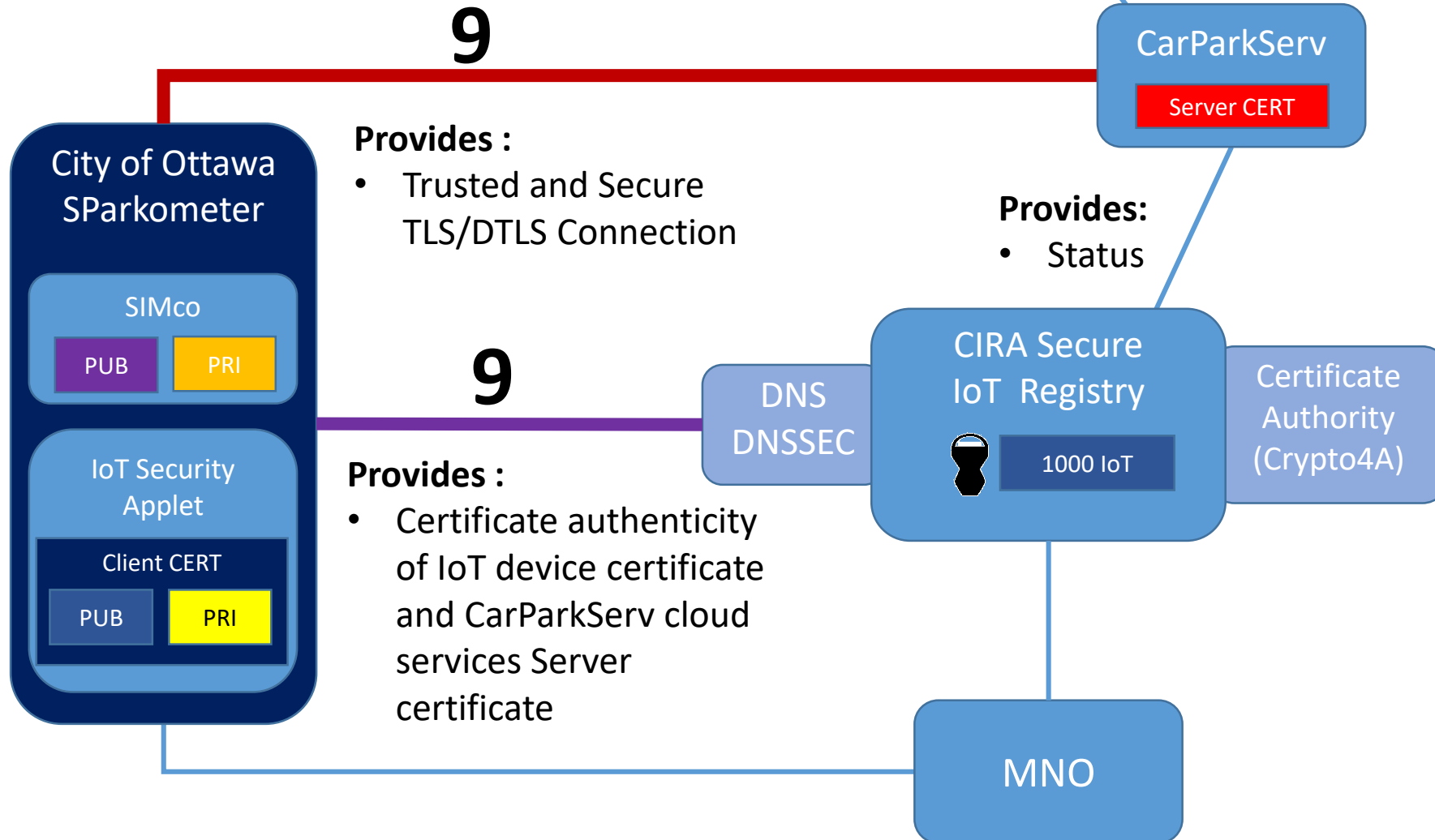
8 – IoT Device Provisioning:

IoT Registry provides MNO with the new encrypted IoT Profile to each of the CarParkServ registered 1000 SParkometer

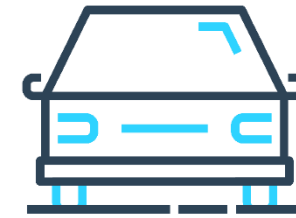
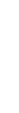


9 – CarParkServ Cloud Connectivity:

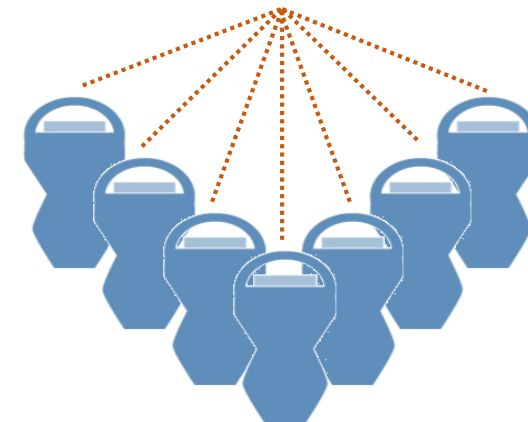
The SParkometer reboot and securely connect to the CarParkServ cloud service in a trusted manner



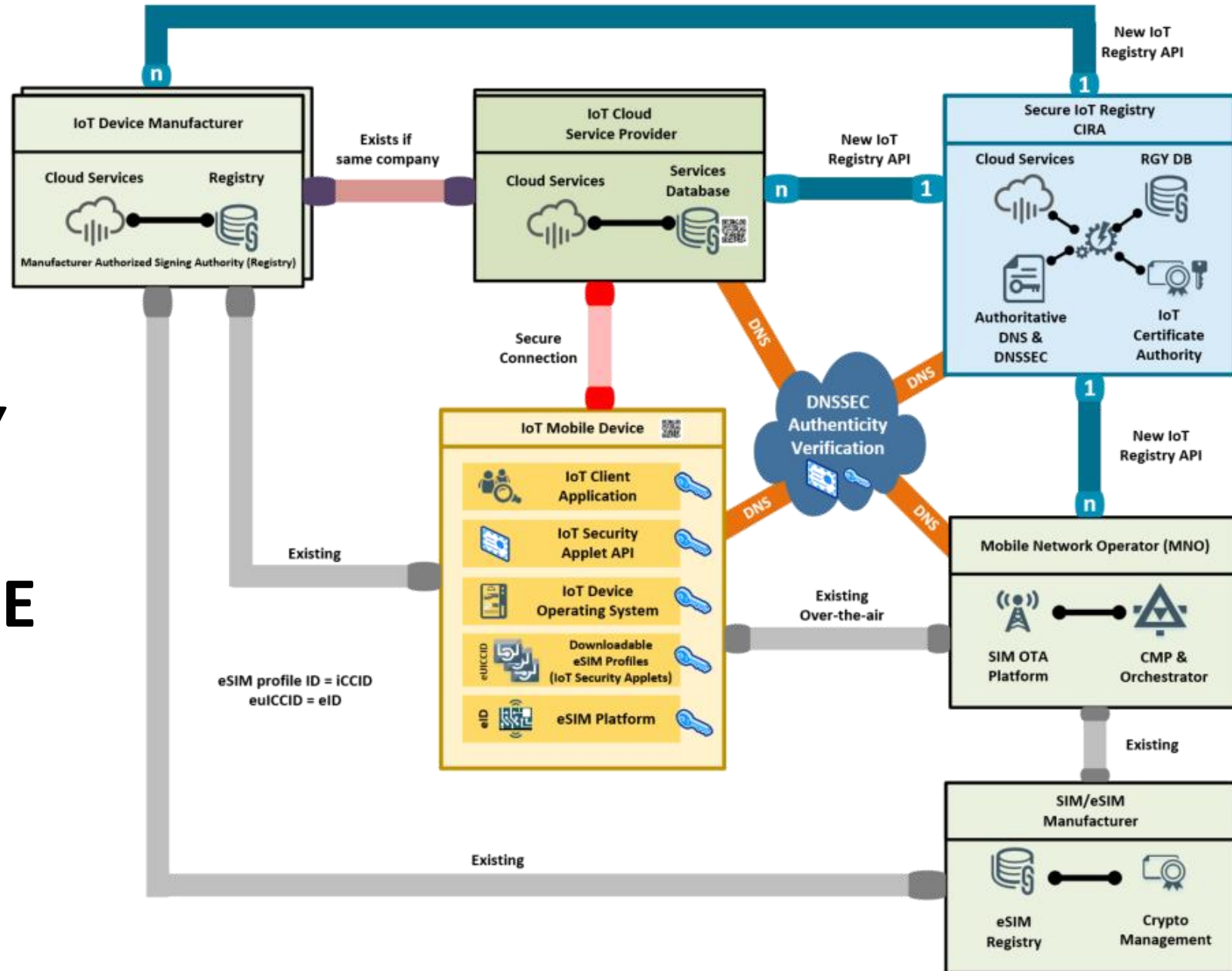
**AND VOILA, WITH ZERO
TOUCH, THE CITY OF
OTTAWA HAS CHANGED
CLOUD SERVICE PROVIDER
SEAMLESSLY FOR A 1000
SMART PARKING METERS**



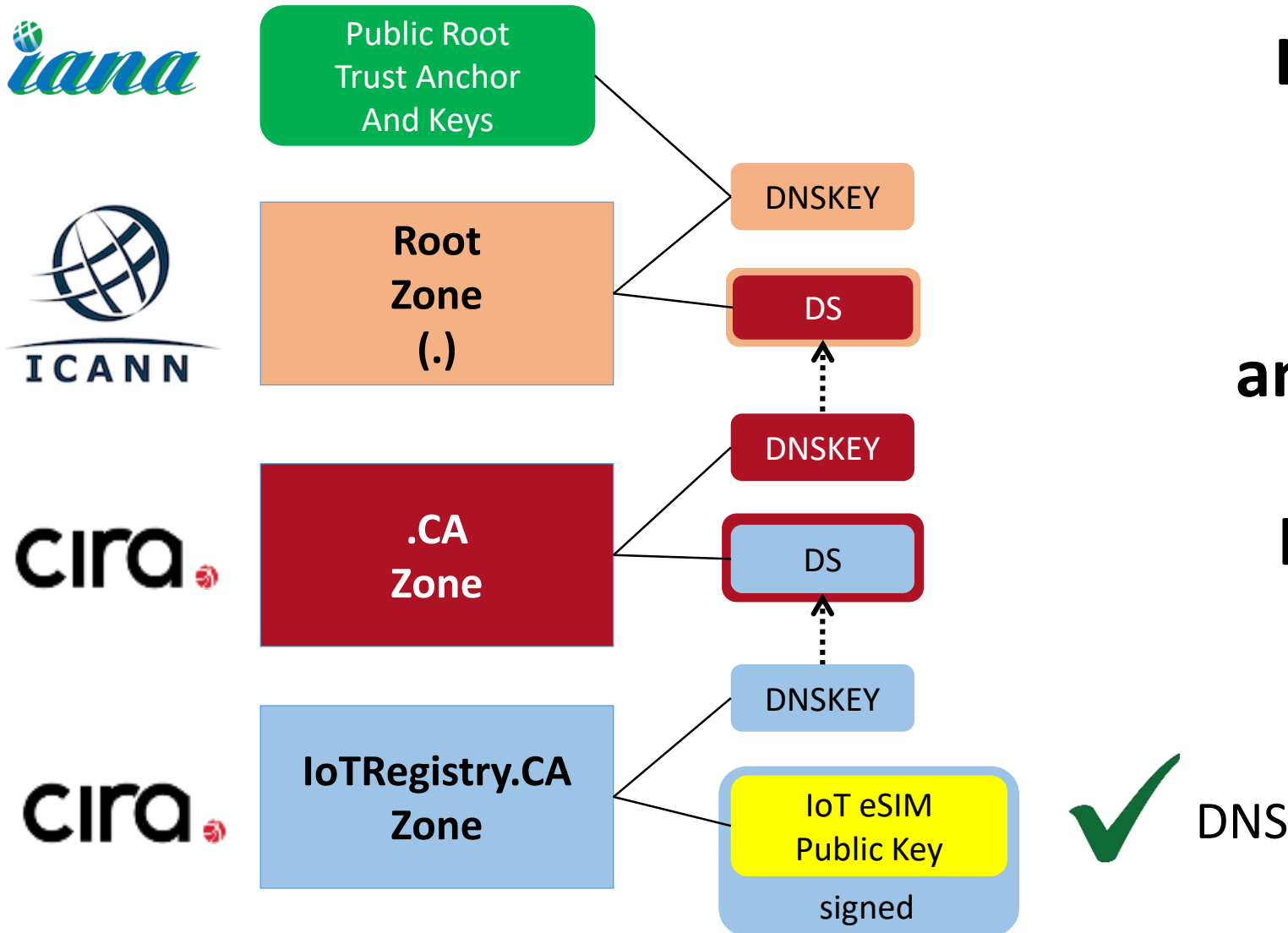
CarParkServ



CIRA'S IoT REGISTRY SOLUTION ARCHITECTURE



A NEW ROOT OF TRUST - DNSSEC



Leveraging the public
DNS & DNSSEC to
validate the
authenticity of eSIM
and IoT security applets
and cloud service
providers public keys



FUTURE & BENEFITS

- **CIRA joining GSMA to develop these standards**
- **Looking for partners (MNO, ASP, CSP, IoT Manufacturers)**
- BRIDGING THE FINANCIAL GAP BETWEEN ASP AND MNO
- PUSHING MUD (RFC 8520) PROFILES PER IoT DEVICE
- PUSHING MNO 5G SPECIFIC CUSTOMER INFO
 - PRIVATE NETWORKING & CUSTOMER OPTIONS

QUESTIONS?

SECURE ALL THE THINGS

