



Research in CSA

Becoming SLA-Ready!

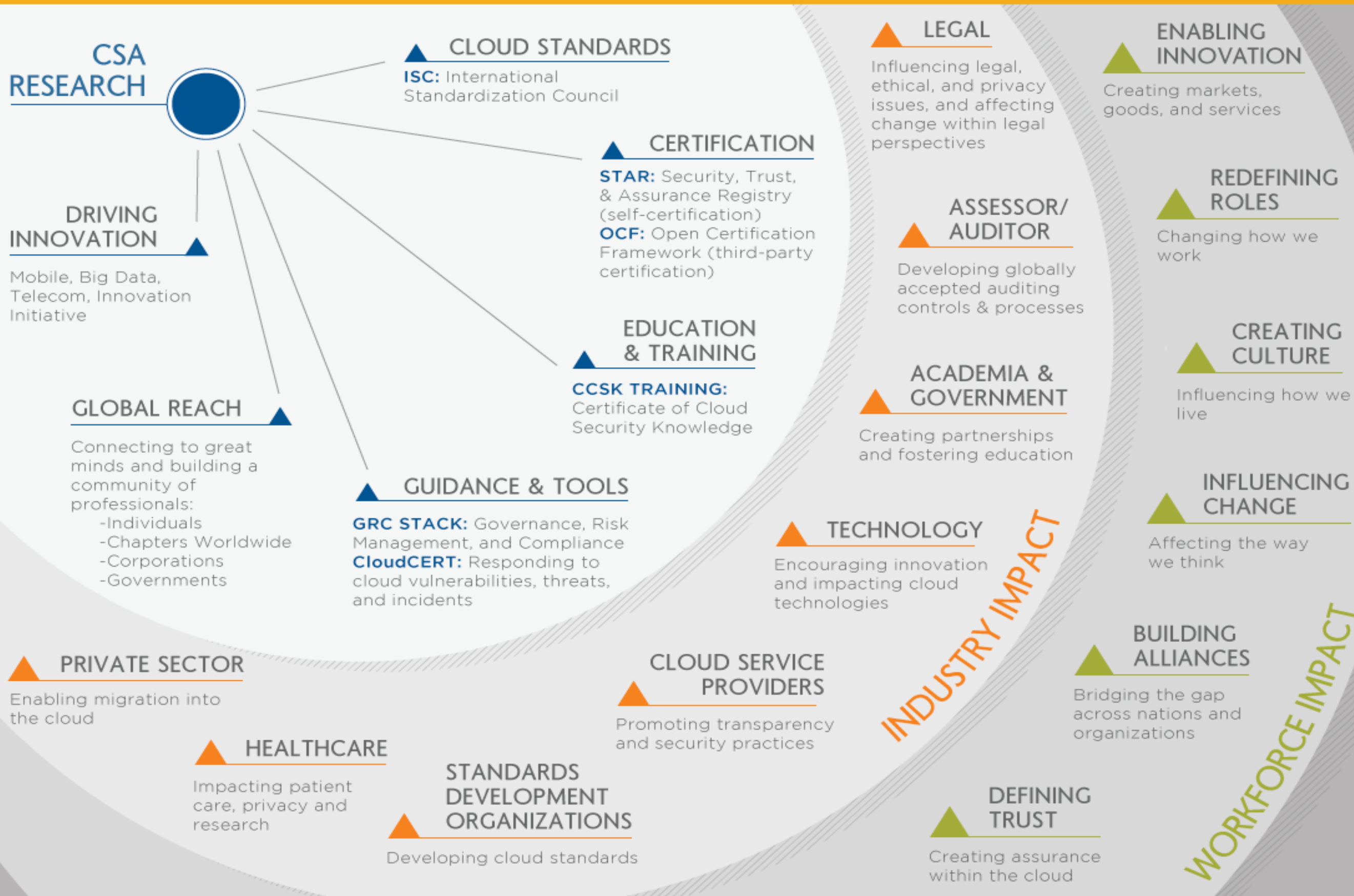
Dr. Jesus Luna, Director of Research EMEA

CSA Fast Facts

- Founded in 2009
- Headquarters in Seattle (Bellingham), Singapore, Edinburgh UK
 - 74,000+ Individual members
 - 300+ Corporate members
 - 75+ Chapters
- Over 30 research projects in 25 working groups
- Strategic partnerships with governments, research institutions, professional associations and industry



IMPACT OF CSA RESEARCH



Active Working Groups

- Cloud Controls Matrix WG
- Quantum Safe Security WG
- Big Data Working Group
- Security as a Service WG
- Containers & Microservices WG
- Open API WG
- Mobile Application Security Testing WG
- Health Information Management WG



Active Working Groups

- Consensus Assessment Initiative
- IoT Working Group
- SDP Working Group
- Mobile Working Group
- Cloud Data Governance WG
- Security Guidance V.4 WG
- Financial Services Working Group
- Incident Management & Forensics WG
- Cyber Incident Sharing Center



CSA participation in EU Funded Research



CSA's EU Projects

EU Project	Main CSA Role
FP7 HelixNebula (Finished 2014)	Dissemination
FP7 CIRBUS (Finished 2014)	Certification best practices (Green Paper)
FP7 CUMULUS (Finished 2015)	Security properties, continuous certification
FP7 Cloudwatch (Finished 2015)	Certification , profiles for security standards
FP7 A4Cloud (Finished 2016)	Standardization , interoperability, accountability assessment/certification
FP7 SPECS (Finished 2016)	Standardization , exploitation, <u>tools</u> , dissemination
H2020 PICSE (Finished 2016)	Procurement barriers identification, best practices
H2020 SLA-Ready (On going)	Standardization , Cloud SLA marketplace
H2020 CloudWatch2 (On going)	Standardization , risk profiling
H2020 Cloud For Europe (FCSB tender – On going)	<u>Brokerage platform design</u> , Security and Privacy requirements, Certification

CSA Research in Action!

Promoting cloud security transparency

Developing Synergies

CSA Initiative	FP7/H2020 Project	Main Relationship – actual or expected
CloudAudit	C4E tender	Prototype design/validation
CTP	A4Cloud, C4E tender, CUMULUS, SLA-Ready, SPECS	Security properties/metrics, API design and prototype development/ validation
CCM	A4Cloud, CUMULUS, PICSE, SPECS	Notion of accountability , machine-readable format, link to security properties
CAIQ	A4Cloud, CUMULUS, SPECS	Techniques for CSPs comparison, risk management
OCF	A4Cloud, CIRRUS, CUMULUS, CW/CW2, HN, PICSE, SPECS	Best-practices, major contributions to Level 3
PLA	A4Cloud, CIRRUS, CW/CW2, SPECS, SLA-Ready, C4E	Accountability toolkit, Privacy compliance

CSA and cloud security SLAs

- Security SLAs are “*contracts*” describing the *Service*, the associated security *quality* levels (SLOs/SQOs) and specifies the security *metrics* to be implemented by the CSP.



Advantages:

- Security automation
- Transparency
- Trust!



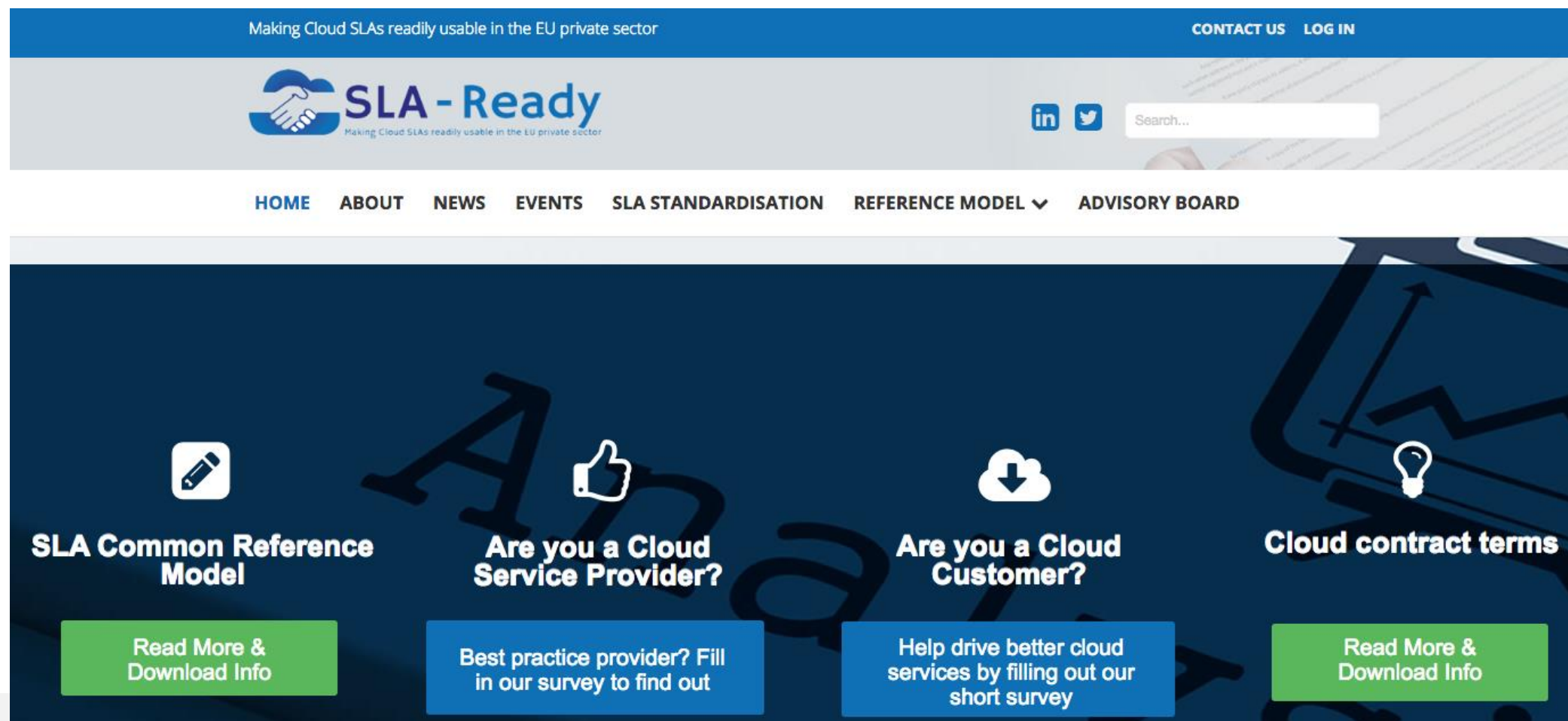
Issues:

- Are SLAs rocket science?

Are you SLA-Ready?

[*http://www.sla-ready.eu/*](http://www.sla-ready.eu/)

- The EU project SLA-Ready aims to empower SMEs through a set of best practices and tools, including a Common Reference Model.
- Help us to make (security) SLAs easier for SMEs!



Our vision

What's coming next?

Emerging Trends We Are Evaluating

- Internet of Things
- Containers, micro services
- Blockchain
- DevSecOps: DevOps applied to security
- Analytics
- Autonomous computing
- Artificial Intelligence



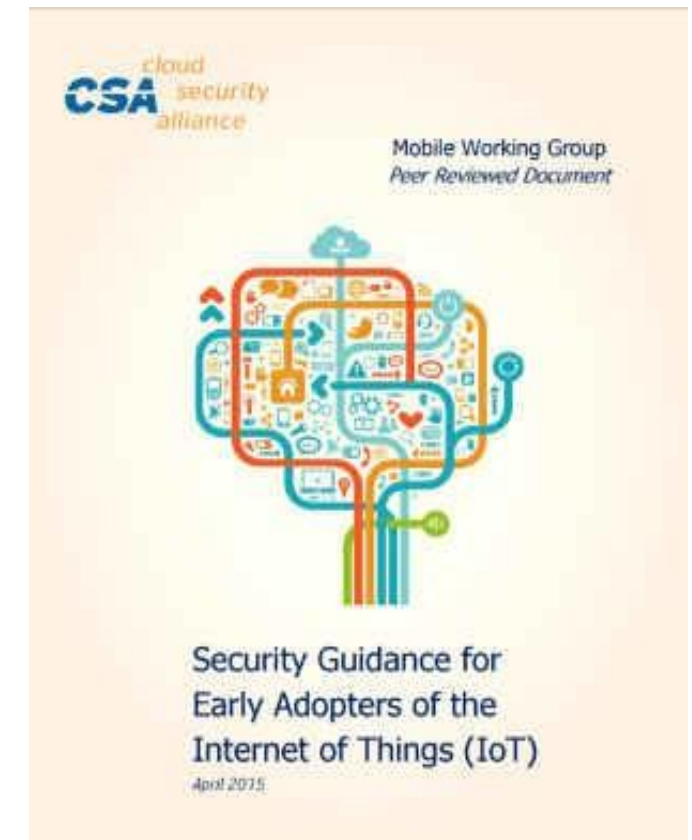
Security Guidance for Early Adopters of IoT

- Released April 2015 with over 35 volunteers contributing content

Control	Description
1	Analyze privacy impacts to stakeholders and adopt a Privacy-by-Design approach to IoT development and deployment
2	Apply a Secure Systems Engineering approach to architecting and deploying a new IoT System.
3	Implement layered security protections to defend IoT assets
4	Implement data protection best-practices to protect sensitive information
5	Define lifecycle controls for IoT devices
6	Define and implement an authentication/authorization framework for the organization's IoT Deployments
7	Define and implement a logging/audit framework for the organization's IoT ecosystem

- Guidance reviewed by both FCC and DHS as input into IoT security strategies

GlobalSign Review of our Early Adopters Guidance: Overall, I'm impressed by the guidance the CSA has put forward with explicit technical details around cryptography and PKI. Until recently, much of the conversation surrounding IoT security has been abstract or generic, so it's exciting to see this concrete advice being released by industry thought leaders.



2016 IoT Plans

- Secure Design & Development of IoT Devices
- Connected Vehicle Security
- Smart Health Research
- Securing Cloud Services for the IoT
- Blockchain of Things



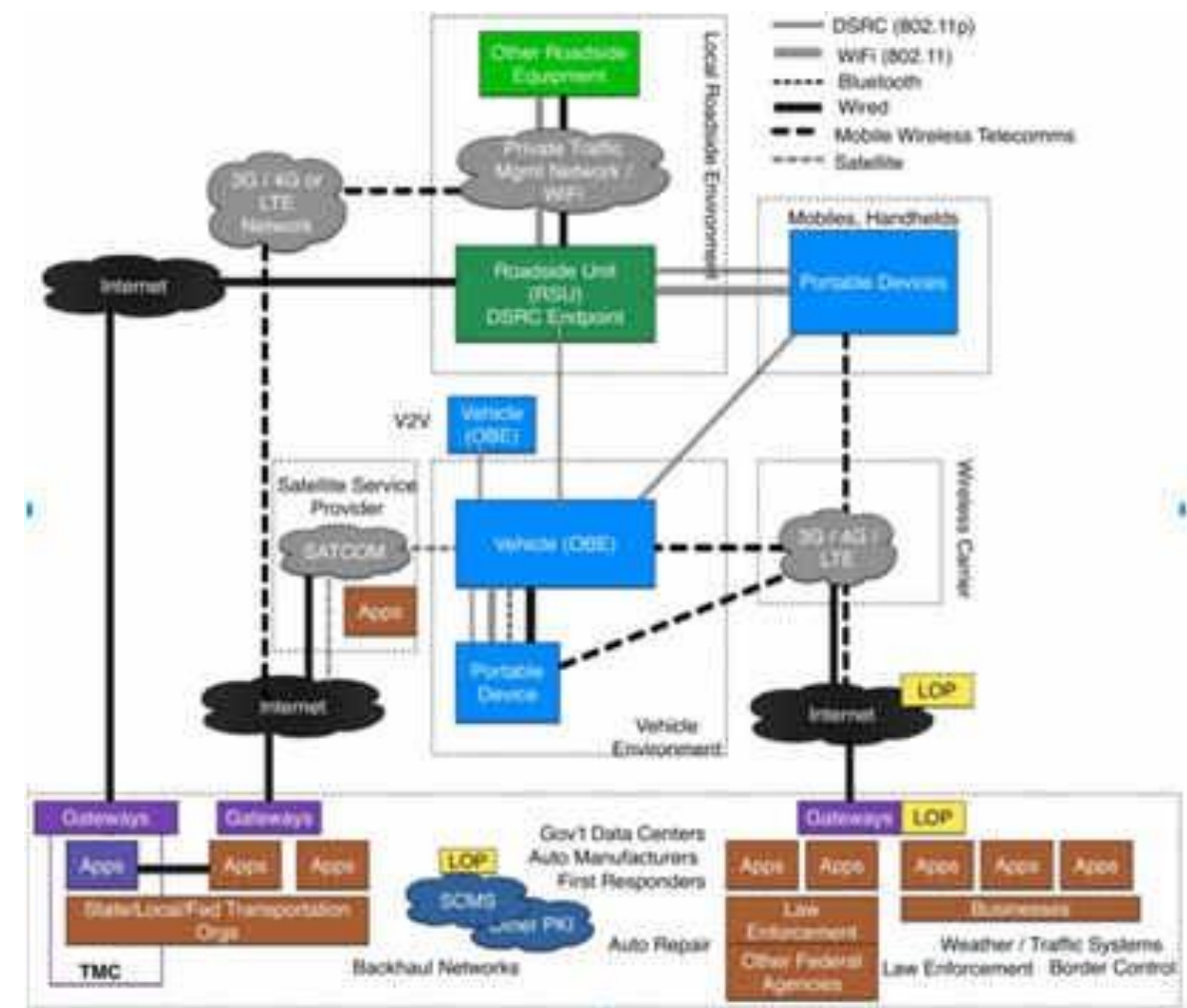
Securing Cloud Services for the IoT

- Will become the next version of our Security Guidance for Early Adopters Document
- Focused on Cloud Security for the IoT
- Initial content may include:
 - Cloud IoT Risks and Mitigations
 - Regulations applied to cloud services for the IoT
 - Security Considerations for Big Data Processing and storage
 - Secure Access to Cloud Services
 - Secure life-cycle management of users and devices through the cloud platform
 - Data Privacy



Connected Vehicle Security

- Short term feedback on Connected Vehicle Security Strategy to be shared with the FHWA
- Connected Vehicles offer the opportunity to reduce collisions and save lives
- These vehicles are designed to communicate with one another, their environment and even pedestrians
- Messages are provided with integrity, authenticity and some cases confidentiality protections
- Privacy controls are also built-in to the protocols and support
- In all cases, the infrastructure that binds these CV components together must be developed and maintained securely



Smart Health Research

- **Goal** - Bring together health care organizations that are members of the Cloud Security Alliance to discuss security topics related to the introduction and management of IoT devices in health care.
- **Format:** Each event is a panel format that focuses on a single IoT-related topic. Panel will consist of up to 4 health care experts selected by CSA from CSA membership organizations. Each event is moderated and lasts one hour and is in a webinar format.
- Event will be marketed for broad attendance to showcase CSA and member organization thought leadership in this space.
- **Event Results:** Event is archived for future viewing. Answers to questions are used as inputs into various CSA IoT WG research activities.



Proposed Event Schedule

- **May 2016** Securing Health IoT (Moderated by B. Russell)
- **TBD** Handling data remanence with wearables and smart medical devices (Moderated by Aaron Guzman)
- **TBD** Empowering Healthcare Ecosystem Using Collaboration Through Healthcare IoT (Moderated by Shyam Sundaram)

THANK YOU!

CONTACT US:

Jesus Luna, Research Director

EMEA, Cloud Security Alliance

Twitter: @jlunagar

@CloudSA

jluna@cloudsecurityalliance.org

Questions?

