

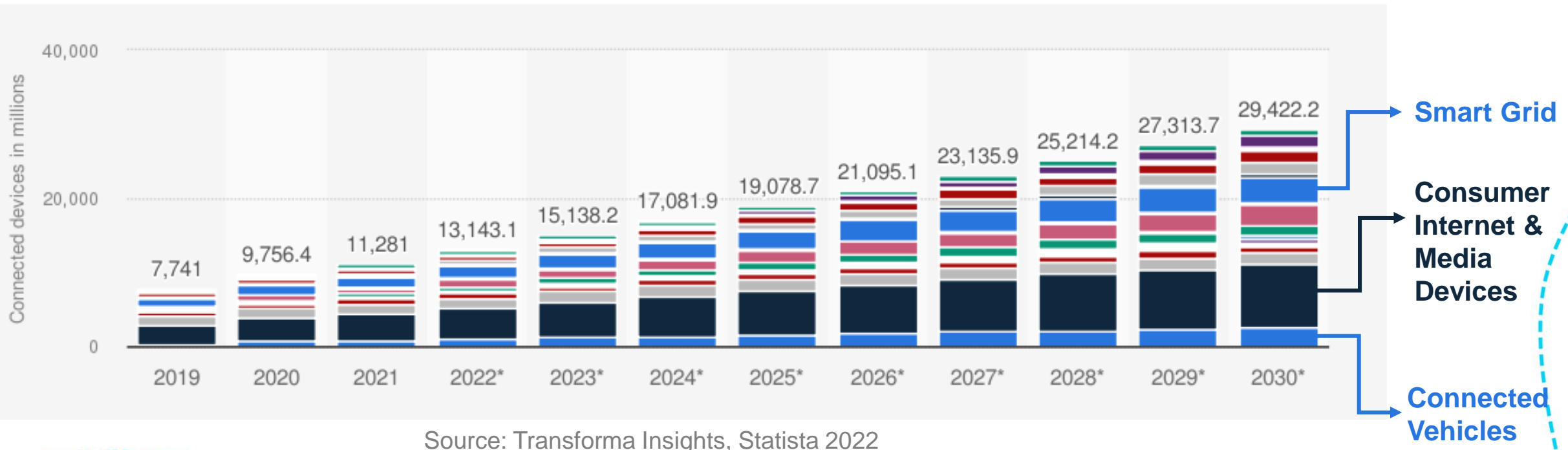
Standards in IoT & Identity

How do they play together, and what are the gaps to solve?

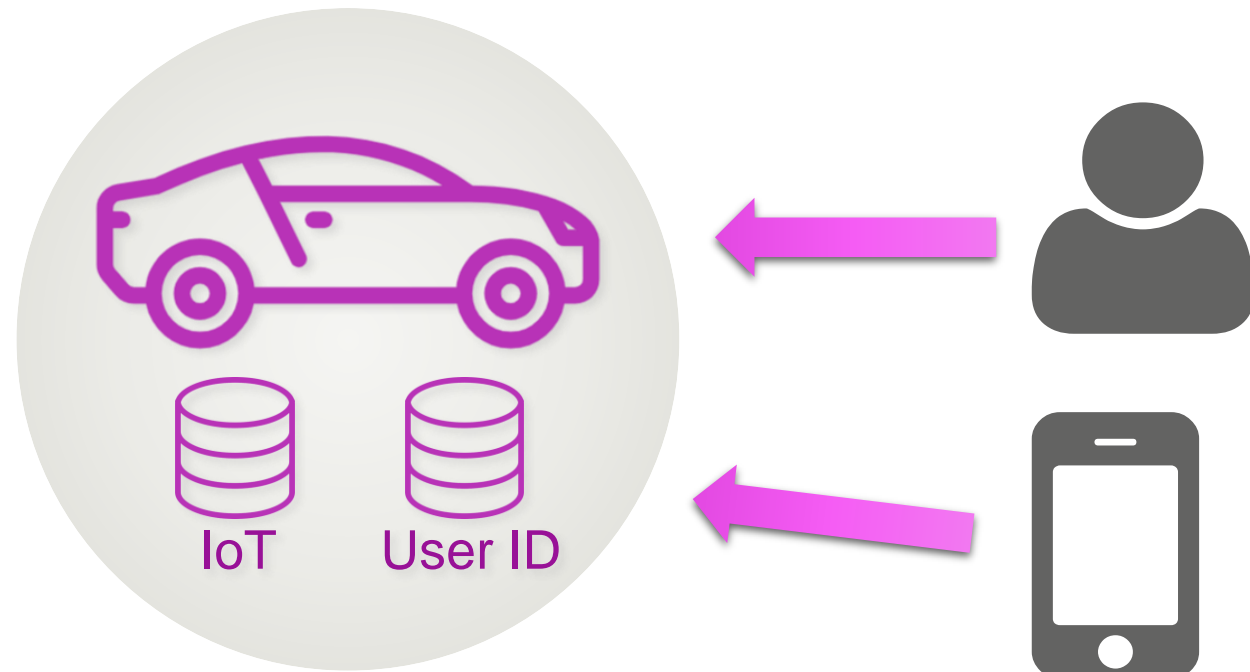
Andre Priebe

Chief Technology Officer
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Number of Internet of Things (IoT) connected devices worldwide from 2019 to 2030, by use case (in millions)



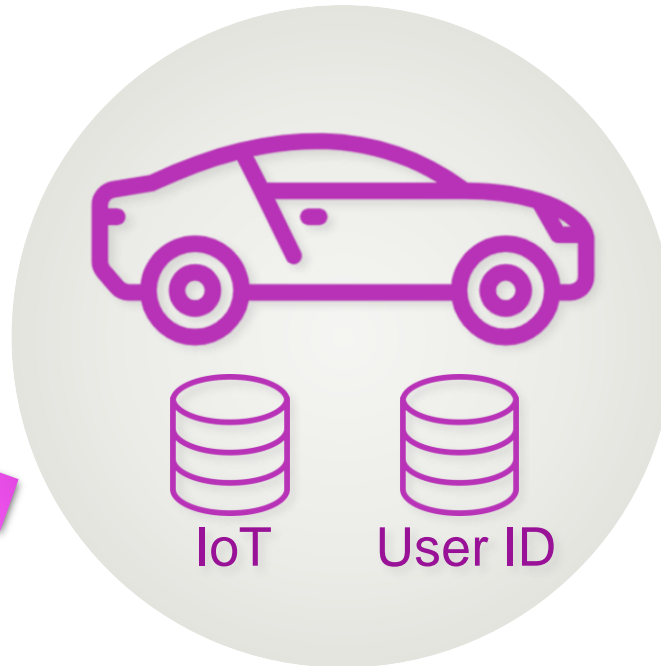
Example Use Cases: Connected Vehicle



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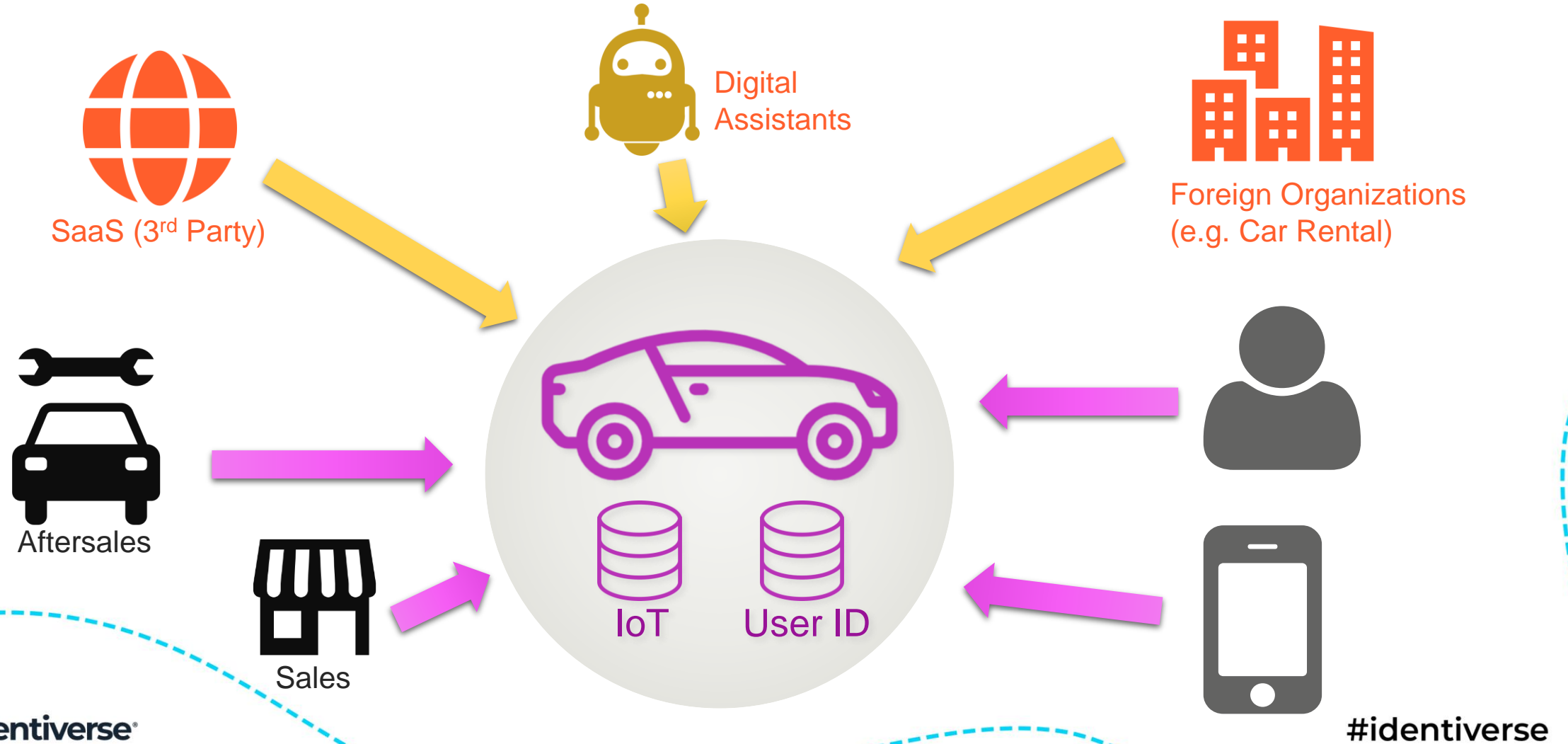


Sales

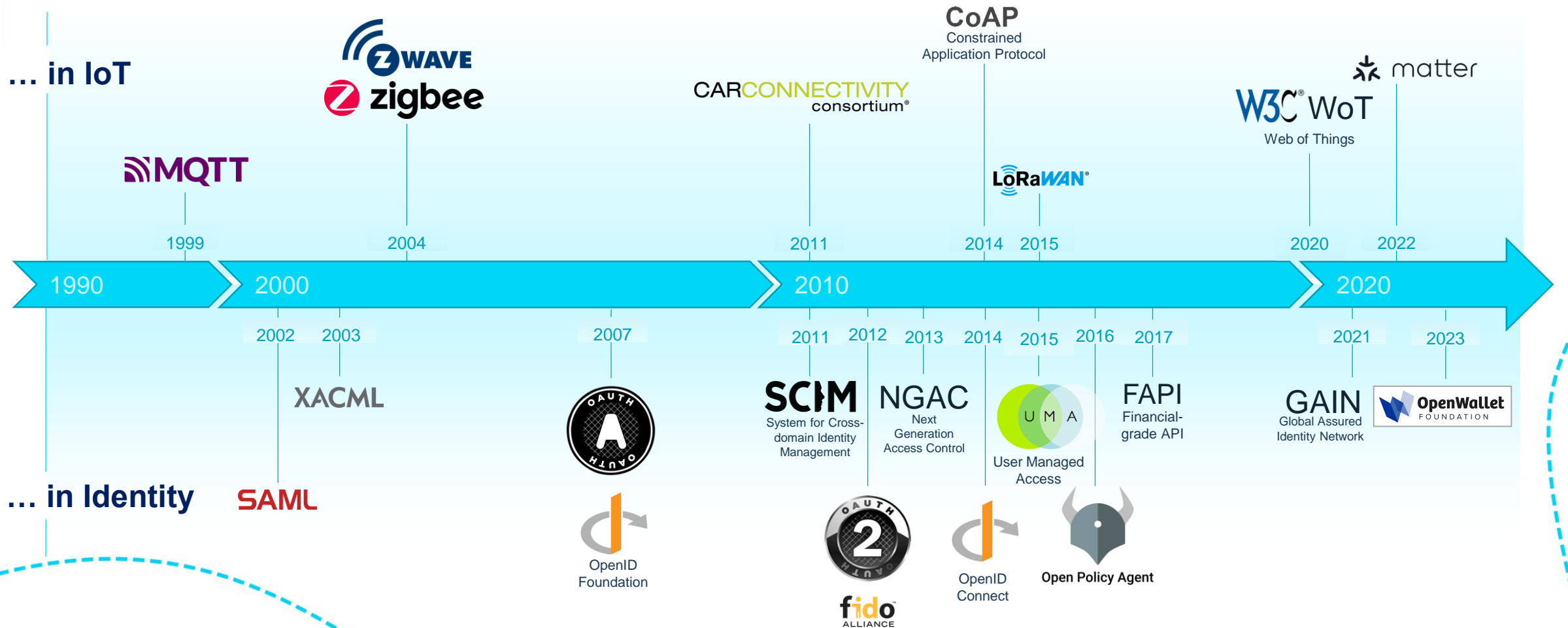


#identiverse

Example Use Cases: Connected Vehicle



Selection of Standards and Frameworks...


















Categorization of Identity & IoT Protocols

Device Identity

User Identity

2	Substantial AuthN/AuthZ	Authentication, Authorization, or Lifecycle of Devices	Substantial Authentication, Authorization, Session Mgt, or Lifecycle capabilities for end users
1	Limited AuthN/AuthZ	Limited Authentication on application/system level	Basic Authentication, re-use of existing tokens, or basic access to end user data
0	No AuthN/AuthZ	No authentication or life cycle capabilities	No authentication or life cycle capabilities for end user

Identity & IoT Protocol Capabilities

Device Identity	2 - Device AuthN	   	 	?
	1- Application / M2M AuthN			    
	0 - None			 
		0 - None	1 - Limited User AuthN/AuthZ/Session	2 - Substantial User AuthN/AuthZ/Session
		User Identity		

Generic Identity & IoT Use Cases

Administrative Use Cases

Manage (CRUD)

Onboarding and
Enrollment

Claim

Delegation of
Privileges

Consent
Management

...

Runtime Use Cases

Access,
AuthN, AuthZ

Session Mgt.

Acting on-
behalf-of

...

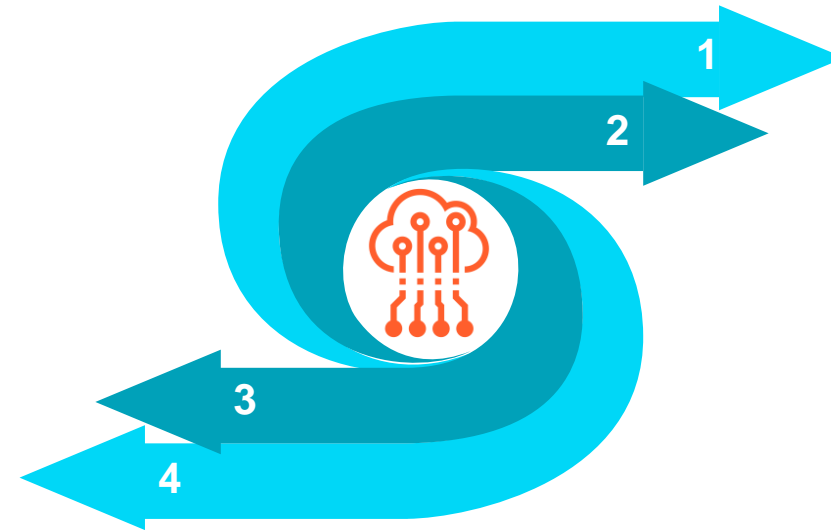
Current state of Standardization in IoT & Identity

1 Several **Standards** available to **cover specific needs** in the area of IoT or Identity, but **not covering both segments** at the same time

2 Relationship between device and user identities is **not covered** by any standards

Non-HTTPS based IoT protocols do not play very well with Identity protocols

3



4 Most implementations require **significant development of proprietary functionality** to close the gap between IoT & Identity

Challenges You Should Be Aware Of In IoT Projects



Missing Guidance



User Authentication at the Device



Claiming a Device



Authorization



Offline Access



**Limited
Resources and
Capabilities**



Protocol Bridge



THANK YOU!



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