



How to return control over user data back to the user – The reTHINK framework

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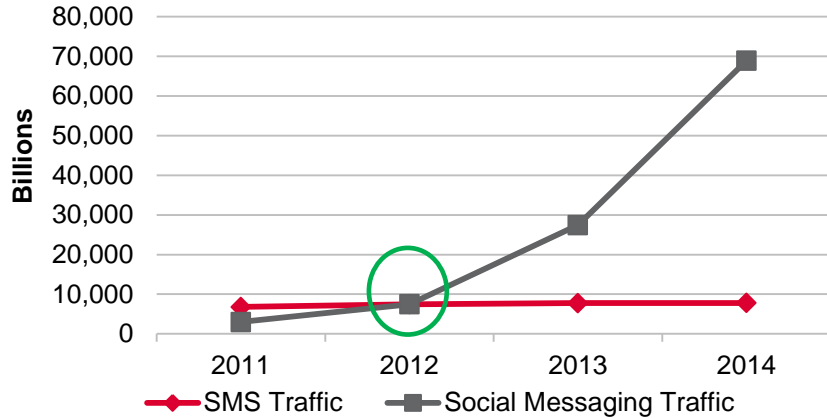




Motivation



Social messaging exceeded „traditional“ SMS traffic in 2012. *



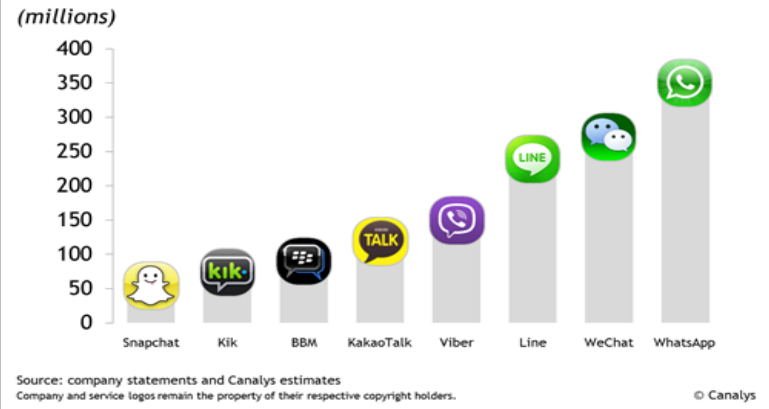
SMS/sub/day
2011:3
2016:3

	2011	2012	2013
Subscribers	241 million	773 million	1.2 billion
Messages per subscriber per day	34	26	63

- Operators need to return to future proof direct revenue models for own Communication services, which also hold in case WIFI access is used. **

SM to cannibalize ~ \$54bn of SMS revenues by 2016. **

Cross-platform social messaging apps - monthly active users globally (November 2013)



- “OTT players as highly disruptive forces, intent to transform into rich media platforms.**
- Carriers are still demonstrating appealing tardiness at offering any compelling bundle of text, voice and video messaging alternatives.*

WhatsApp new daily record (02 April 14):
20B messages sent and 44B messages received in just 24 hours!

*Ovum: Counteracting the Social Messaging Threat, July 2012,, Informa: OTT messaging: Traffic will be twice the size of P2P SMS by end-2013, April 2013

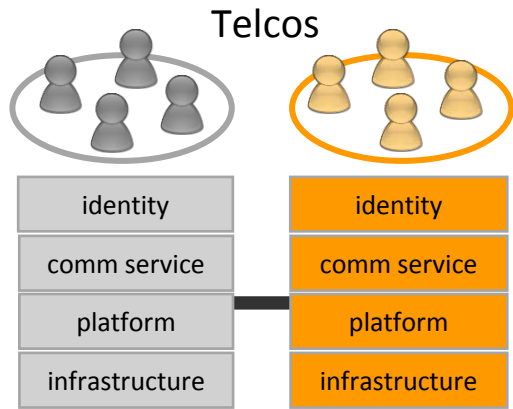
**Current Analysis: OTT Messaging Apps Gain a Monetization Foothold – And It Goes Way Beyond Chat Dec. 2013



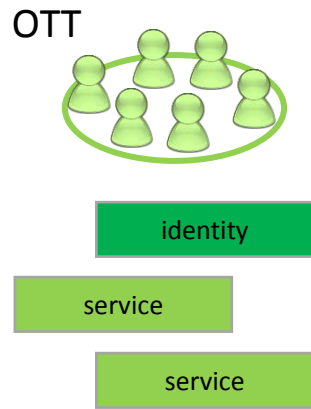
General objective: Cross domain interaction



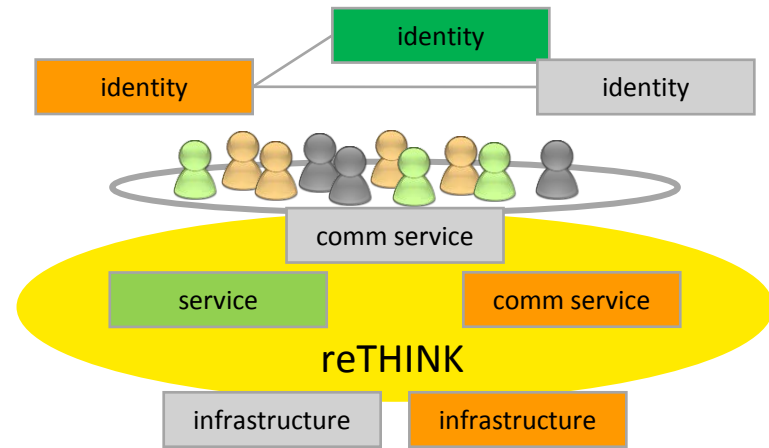
Telcos versus OTT – Leverage the Best of Both Worlds



Federated Distribution Model



Walled Garden Distribution Model



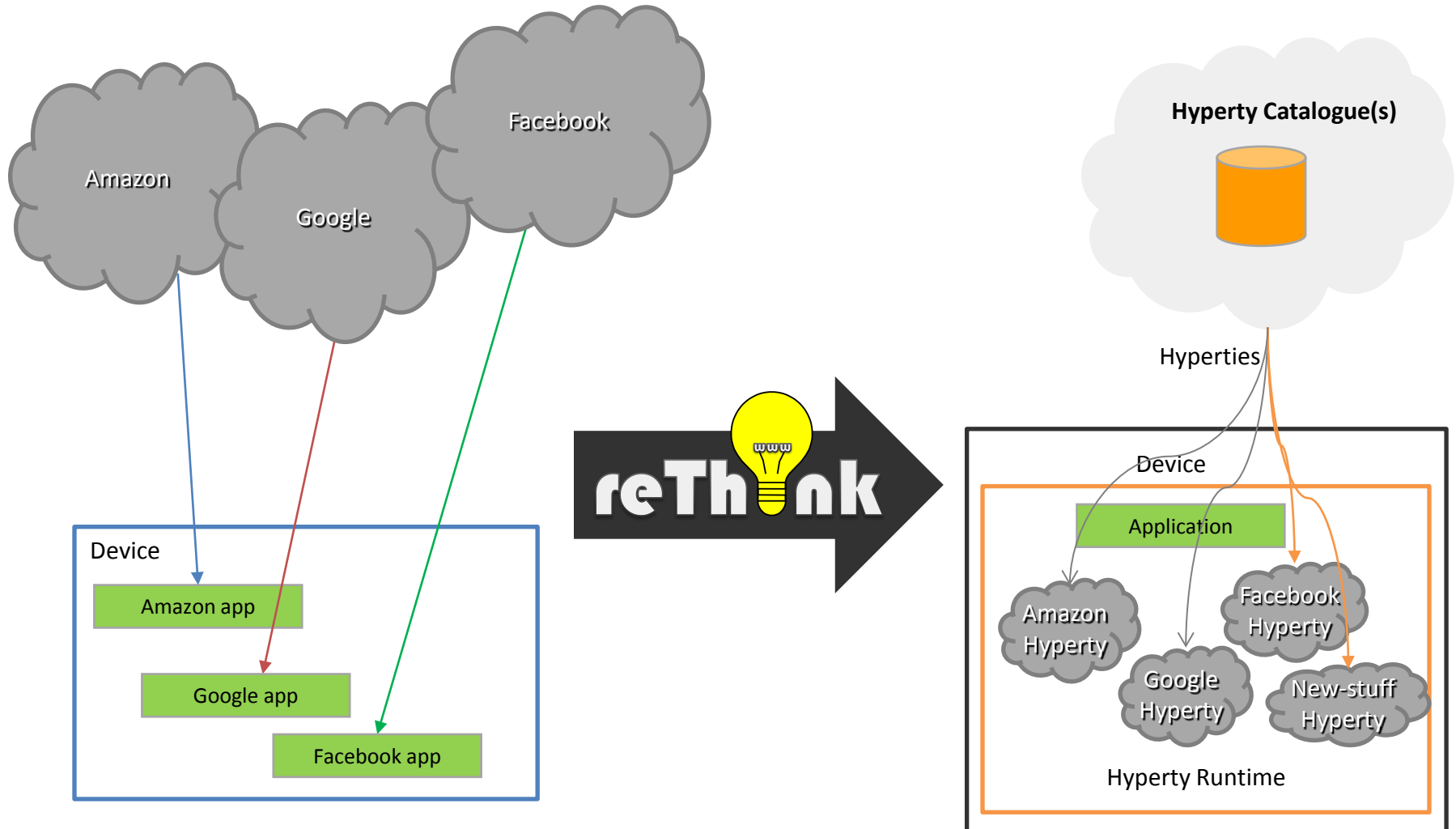
Trusted cooperative service delivery model

Unlock current OTT communication silos.





Principle I: From Silos to *Hyperties*



- Silos in the cloud and in the device
- apps are bound to proprietary clouds
- not able to mix features from different clouds
- new features require updates!

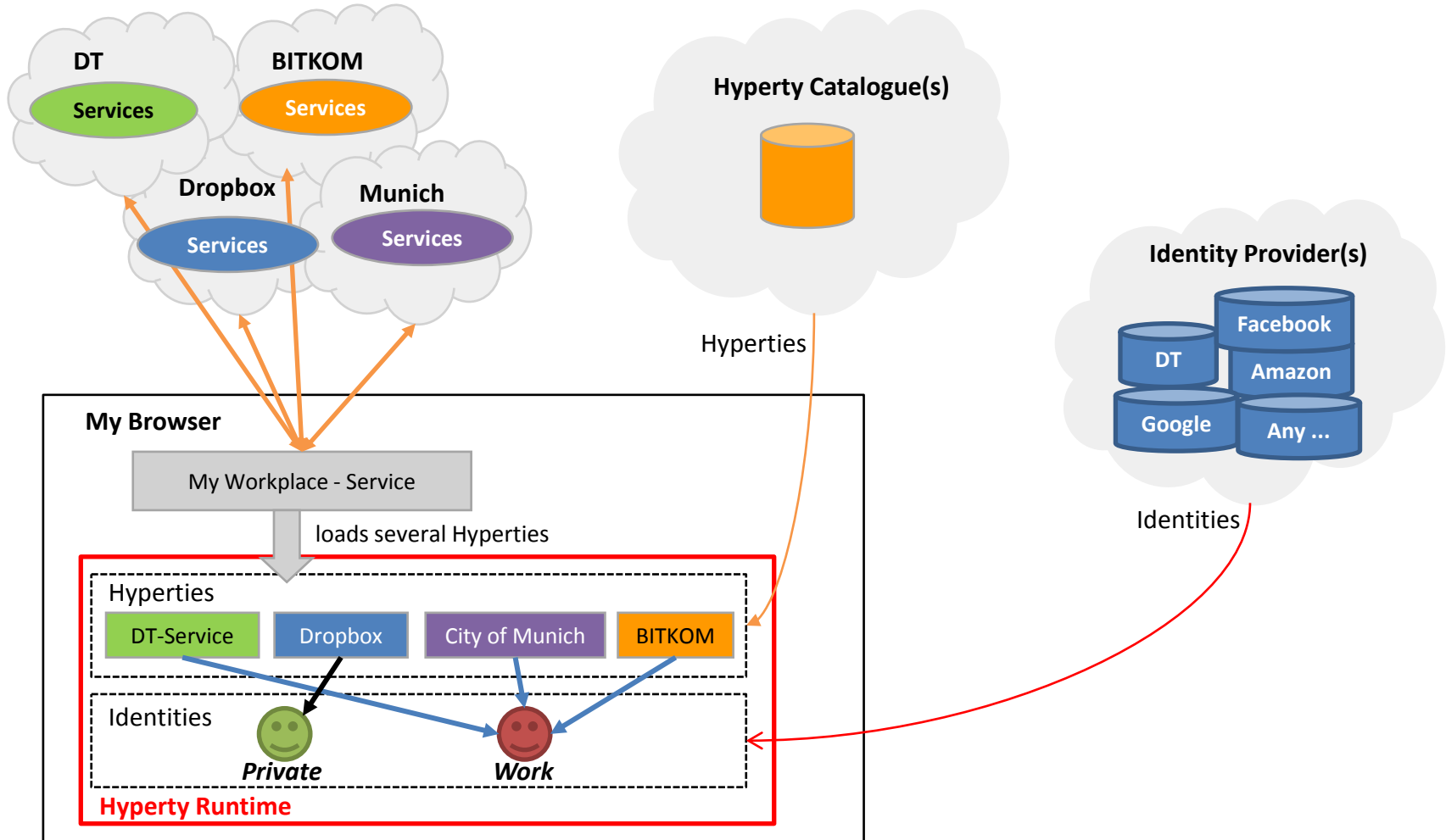
- „Cooperative clouds“ in the device
- new features installable **automatically** on-the-fly according to the context



Principle II: Different identities in one service?



„No problem. This is a reThink core feature!“





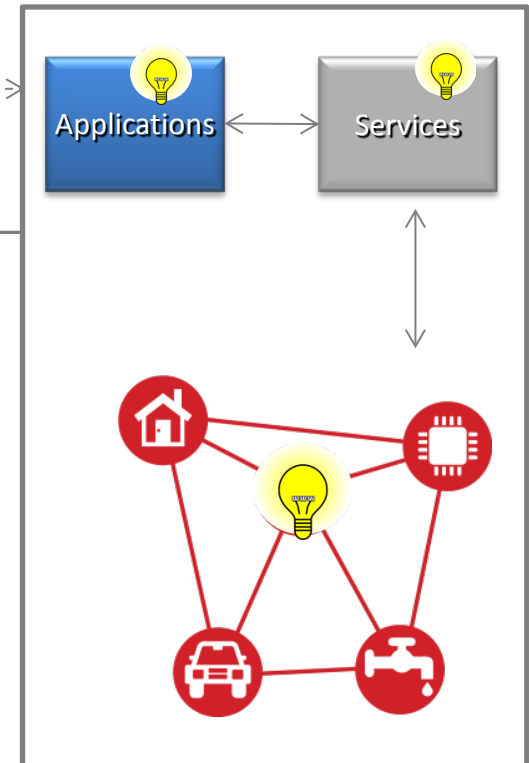
Principle III: Bring & Manage Your Own Identity reThink

Contexts:
*Private, Business,
Hobby, Sports*

*She wants to communicate and
switch between roles and identities*



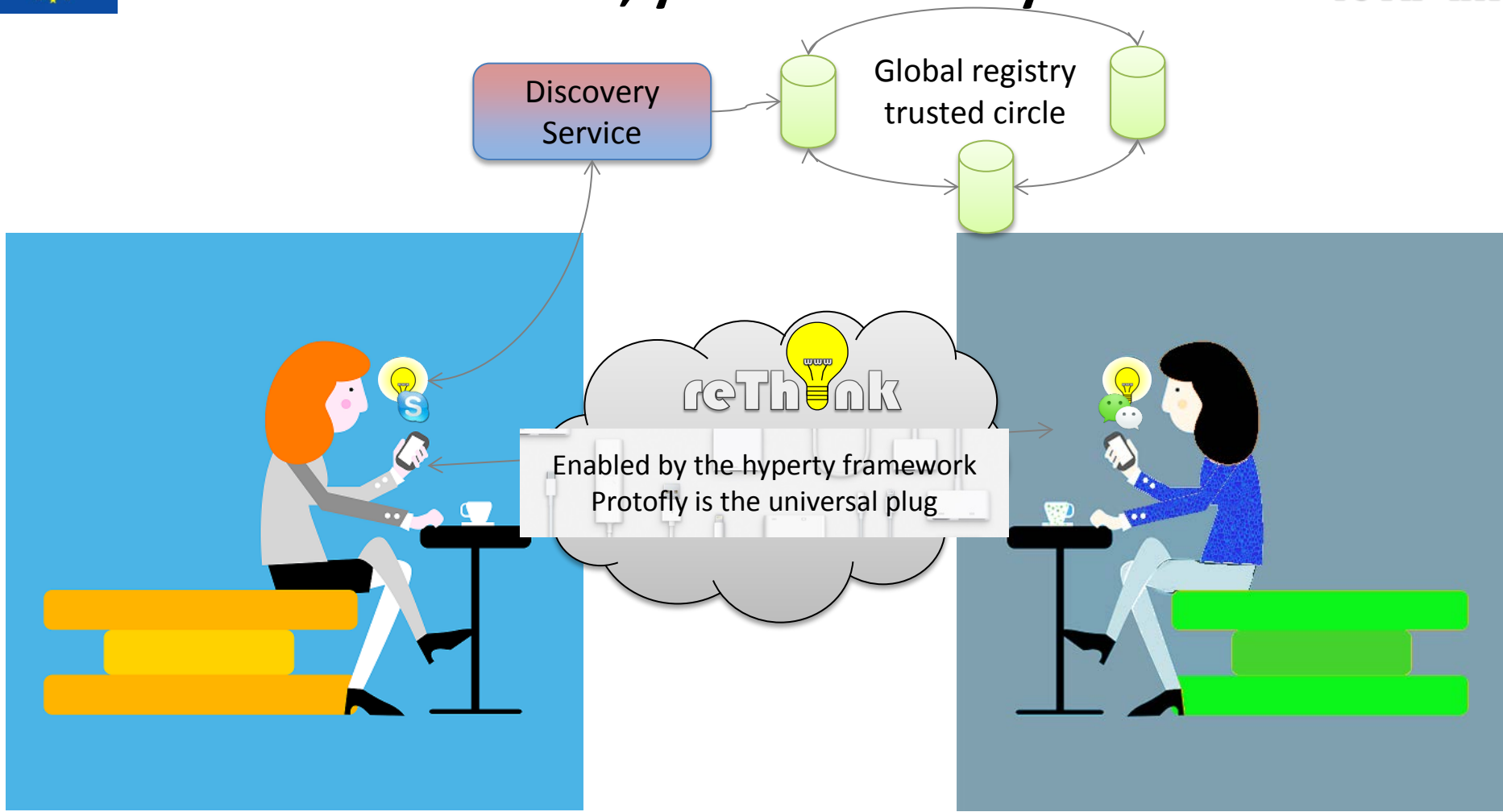
She chooses her Identity ... and logs in



*and she can be reached on her active
application in the current context*



Just call me, you can find my ID



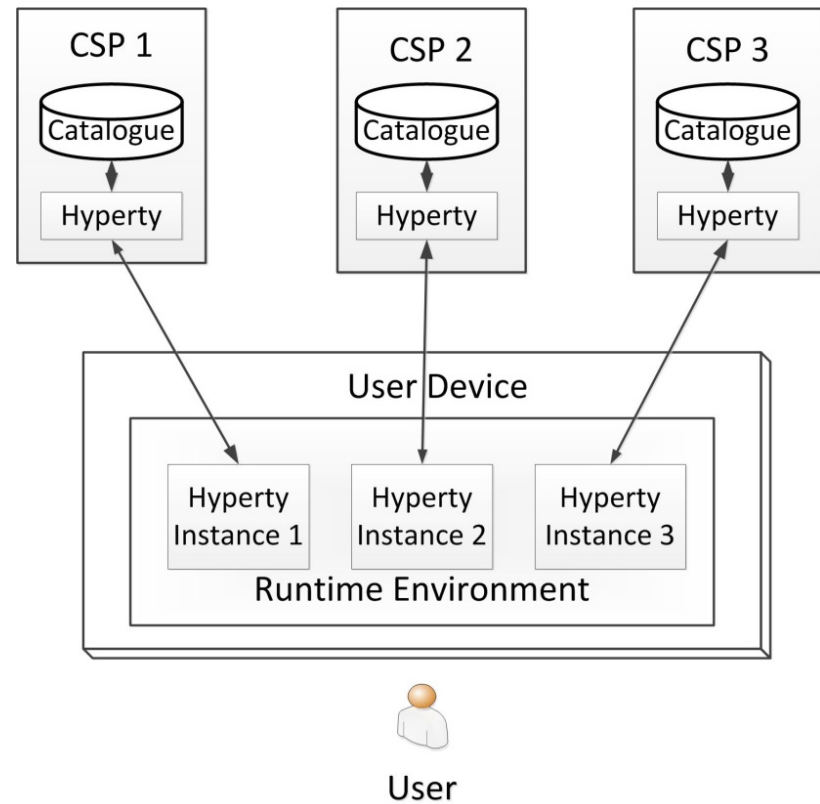


The Hyperty concept

Hyperty in a nutshell

Hyperties are

- Micro-services that can be deployed just in time
- Forming complex services or applications
- Reusable building blocks





Data model agreements lead to interoperability

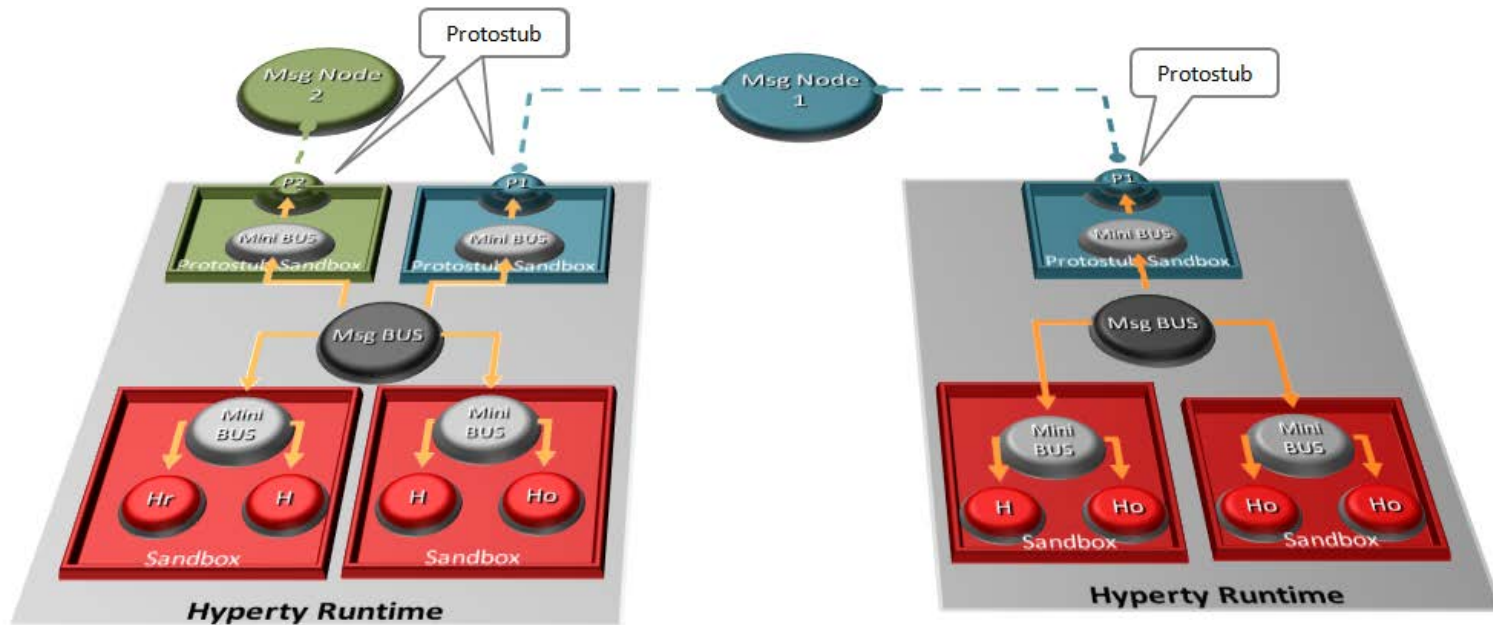


Hyperty and Hyperty runtime

Hyperties are

- protocol agnostic
- incorporating an agreed data model
- running in an execution environment
- inherently interoperable

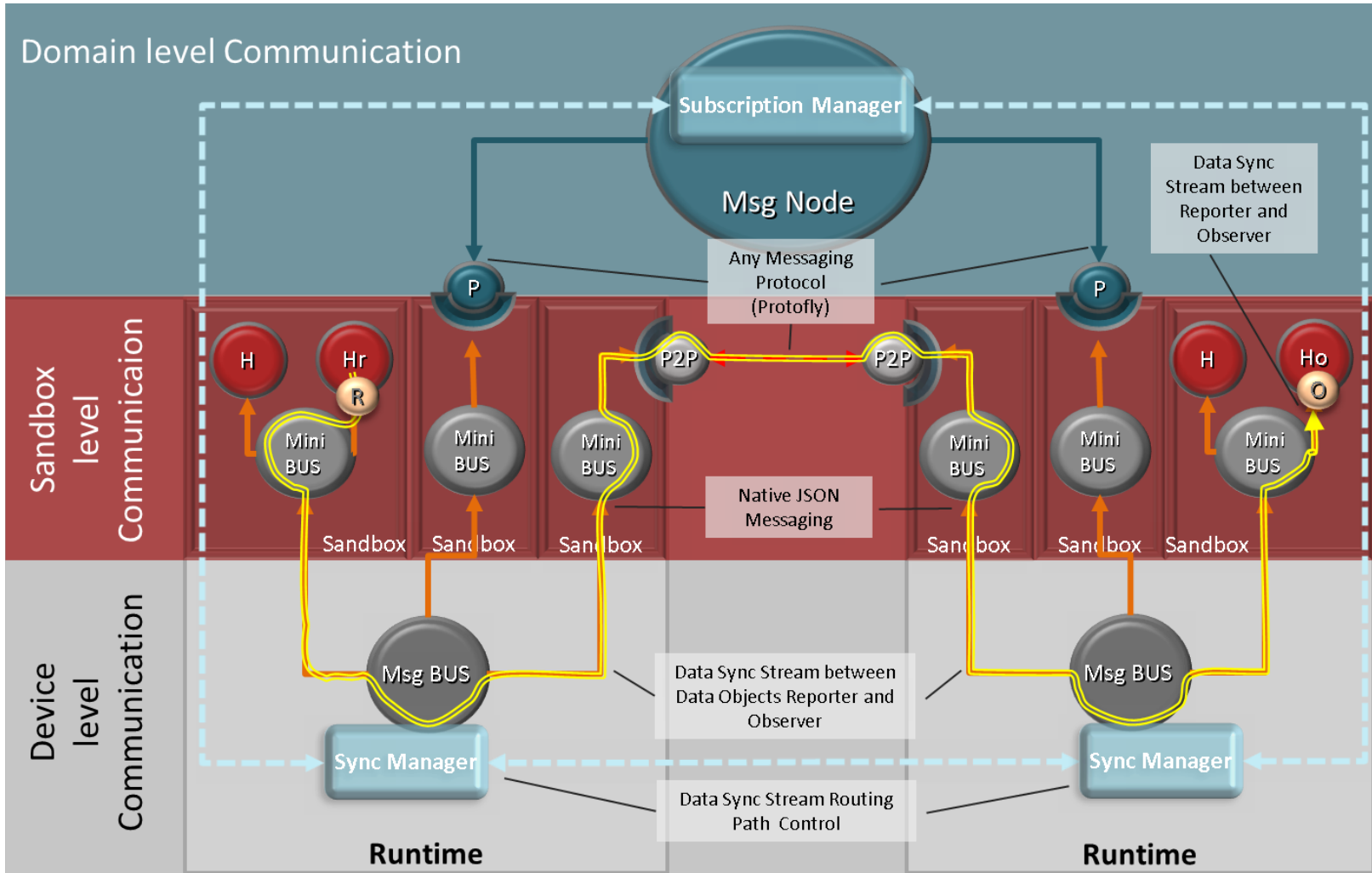
Common data models are the only agreement needed for inherent interoperability





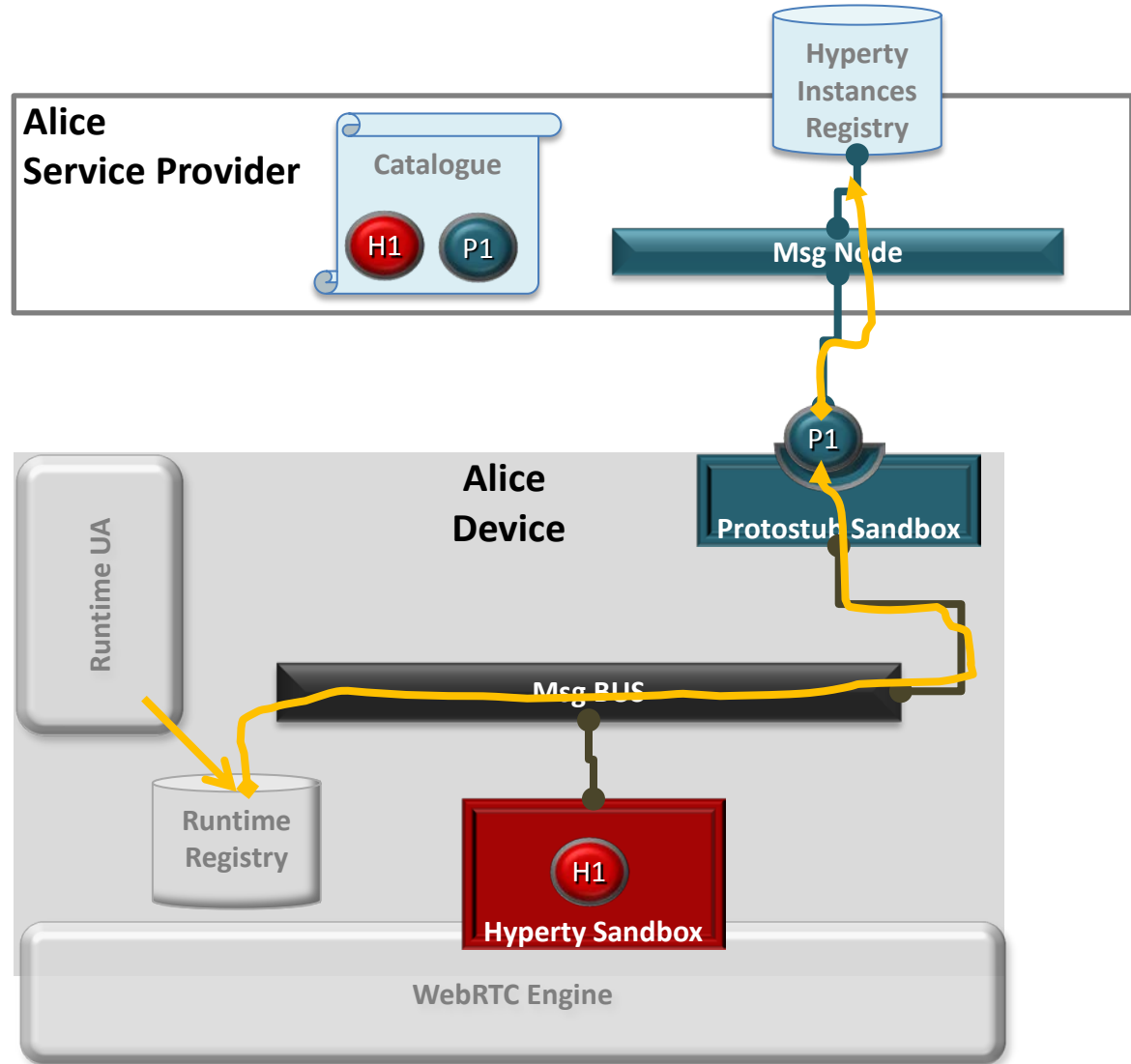
Disruptive communication model

The technical side



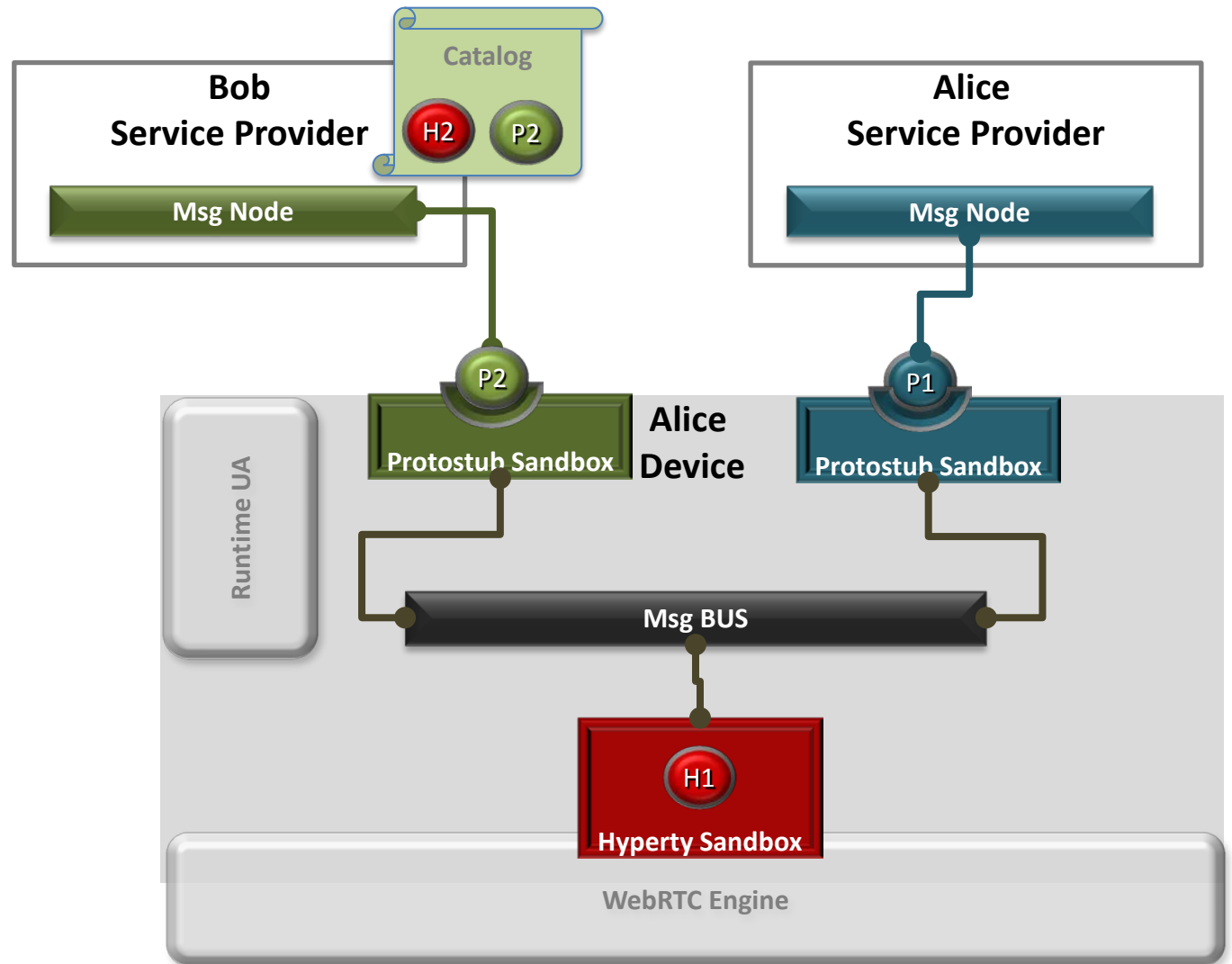


Basic Procedures



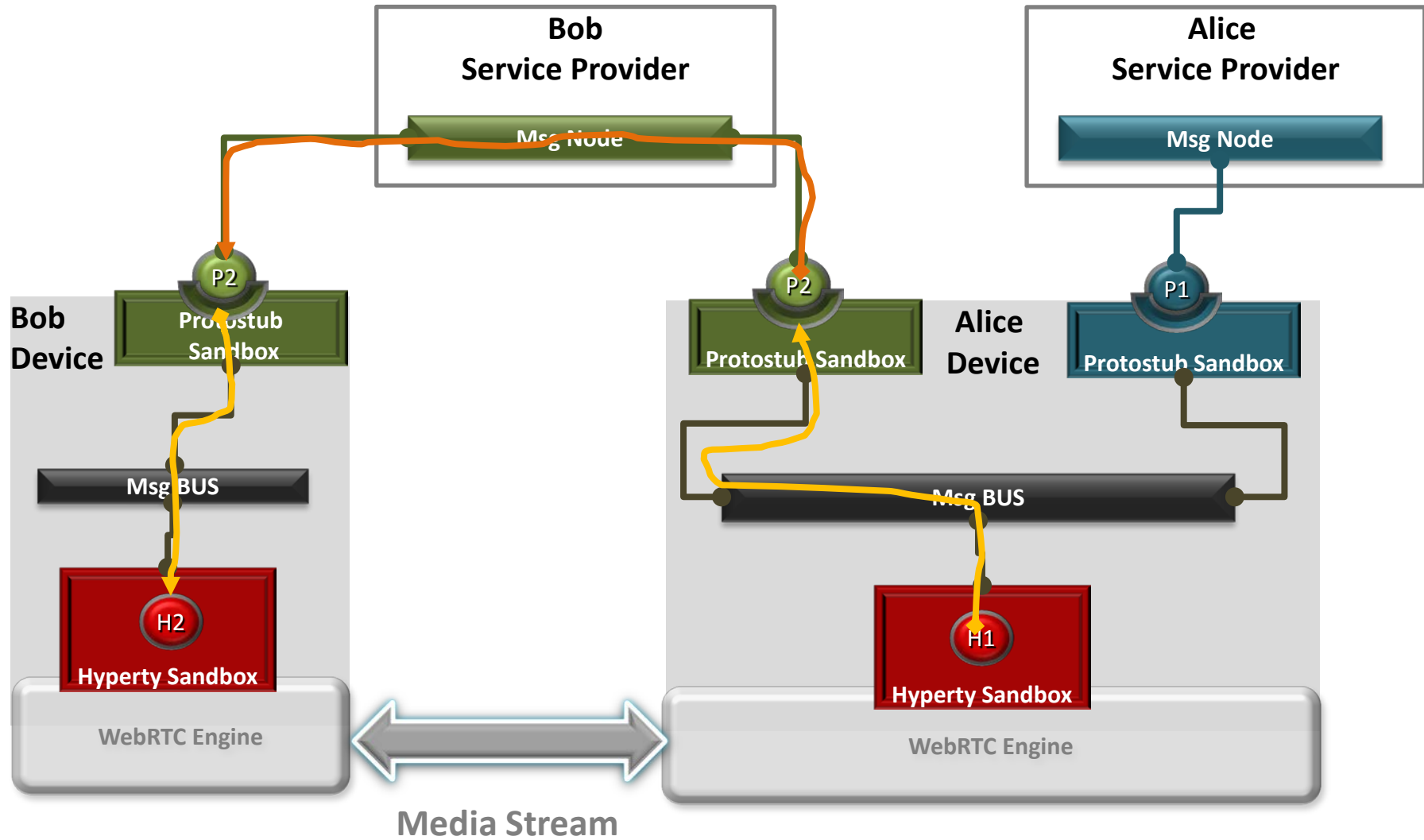


Basic Procedures





Basic Procedures

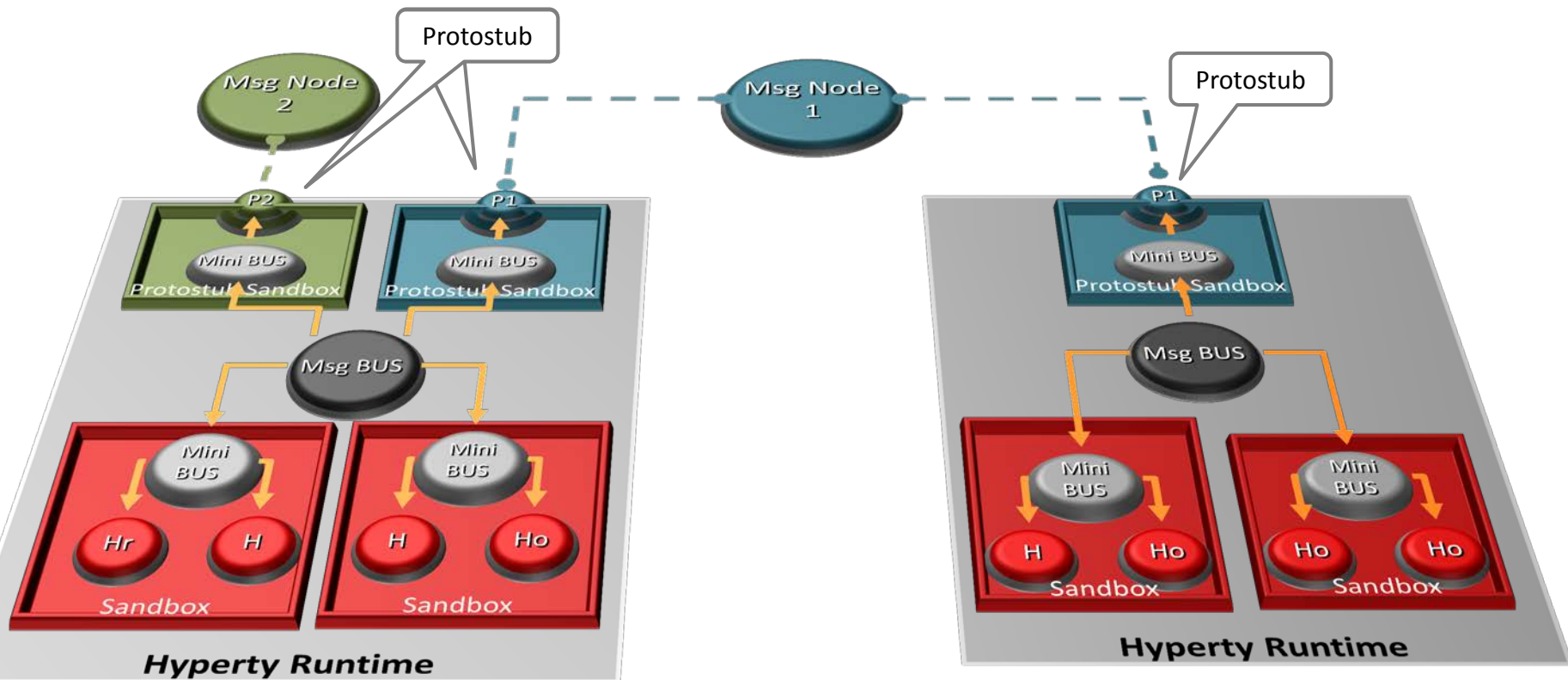




Protocol on-the-fly – Protofly



- Protocol on-the-fly leverages the code on-demand support by Web runtimes (e.g. Javascript)
- The most appropriate protocol stack is dynamically selected loaded and instantiate during run-time

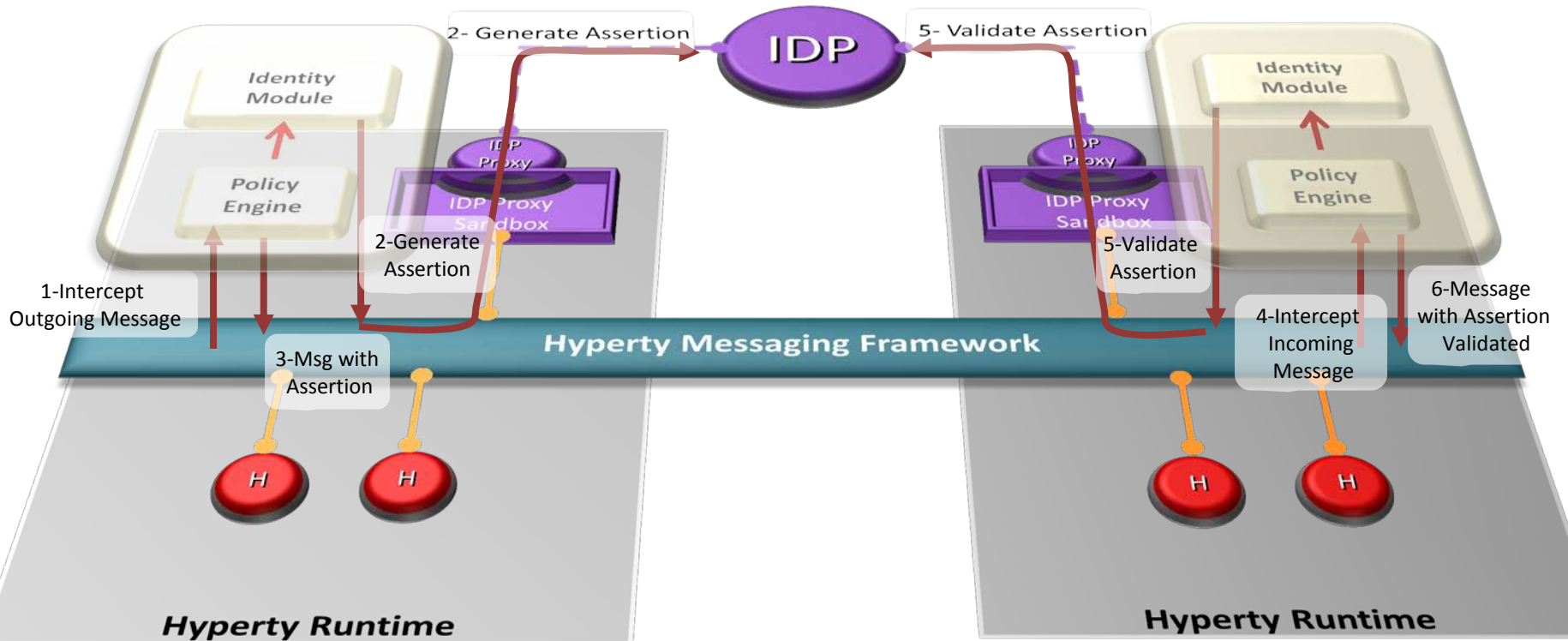




Trust Model

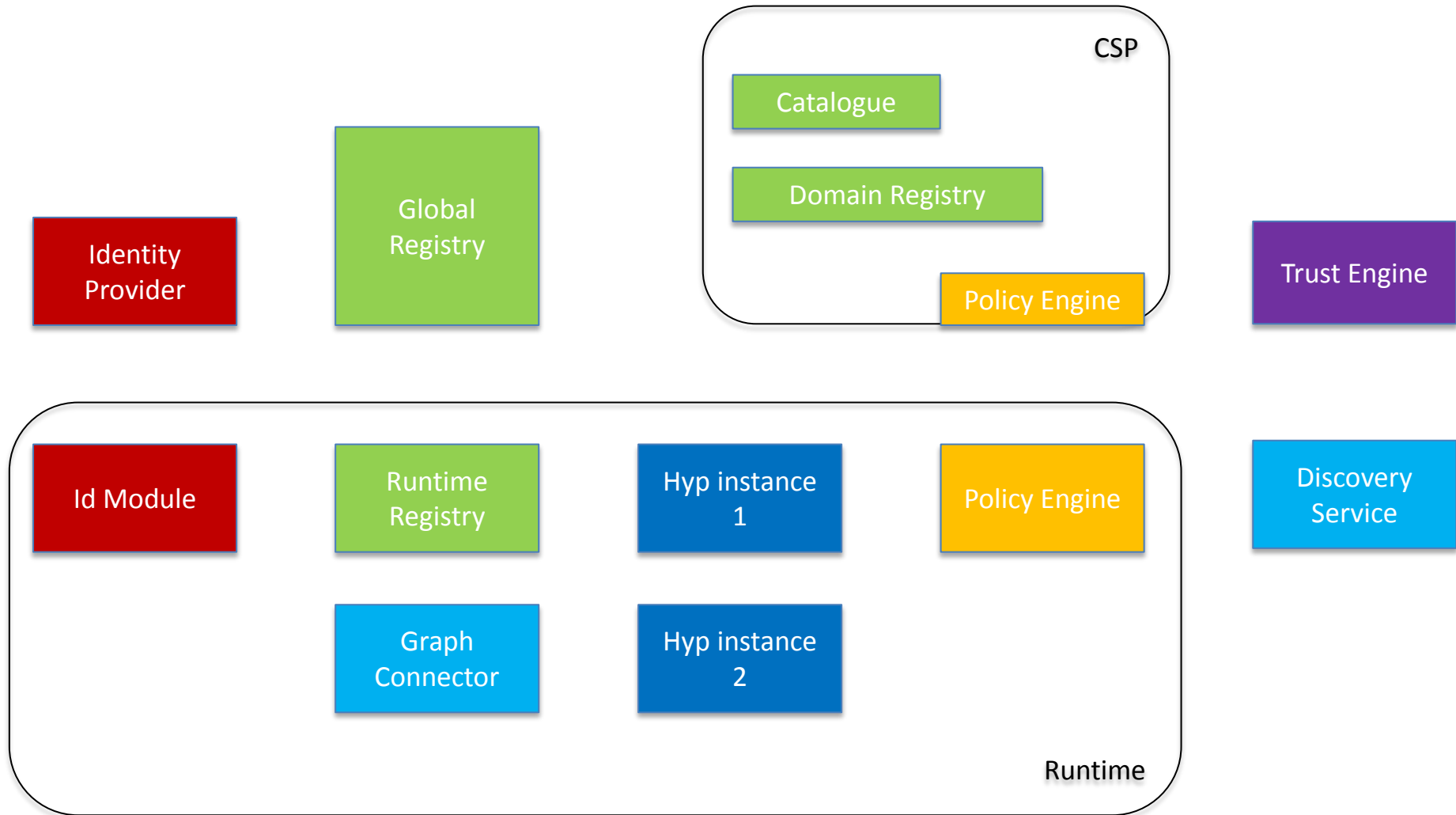


- Identity tokens are generated, inserted in intercepted Messages sent by Hyperties, and validated by recipient Hyperty Runtime before delivered to the target Identity.
- Identity management procedures are performed according to applicable policies managed by the end-user.



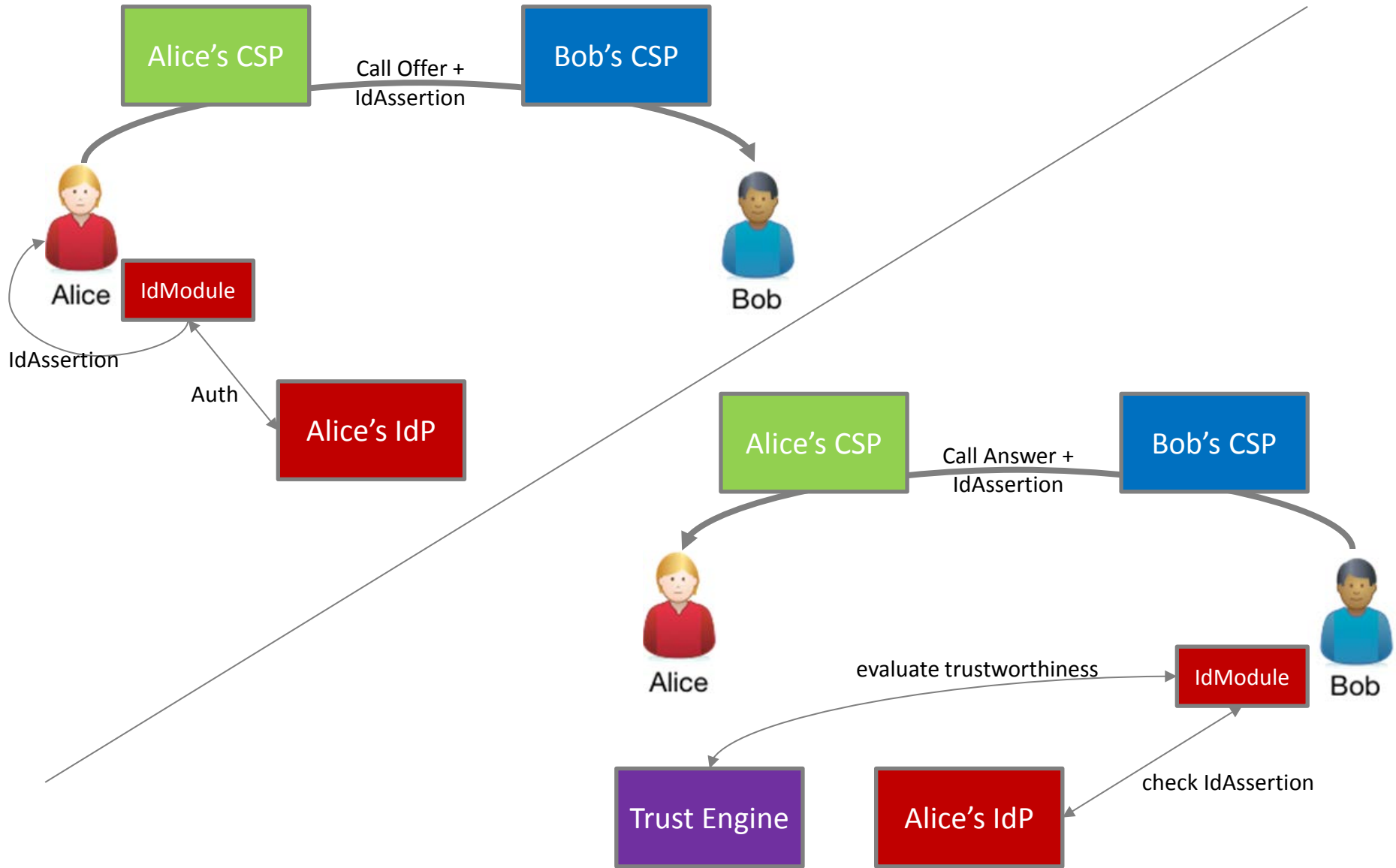


Identity support services: big picture



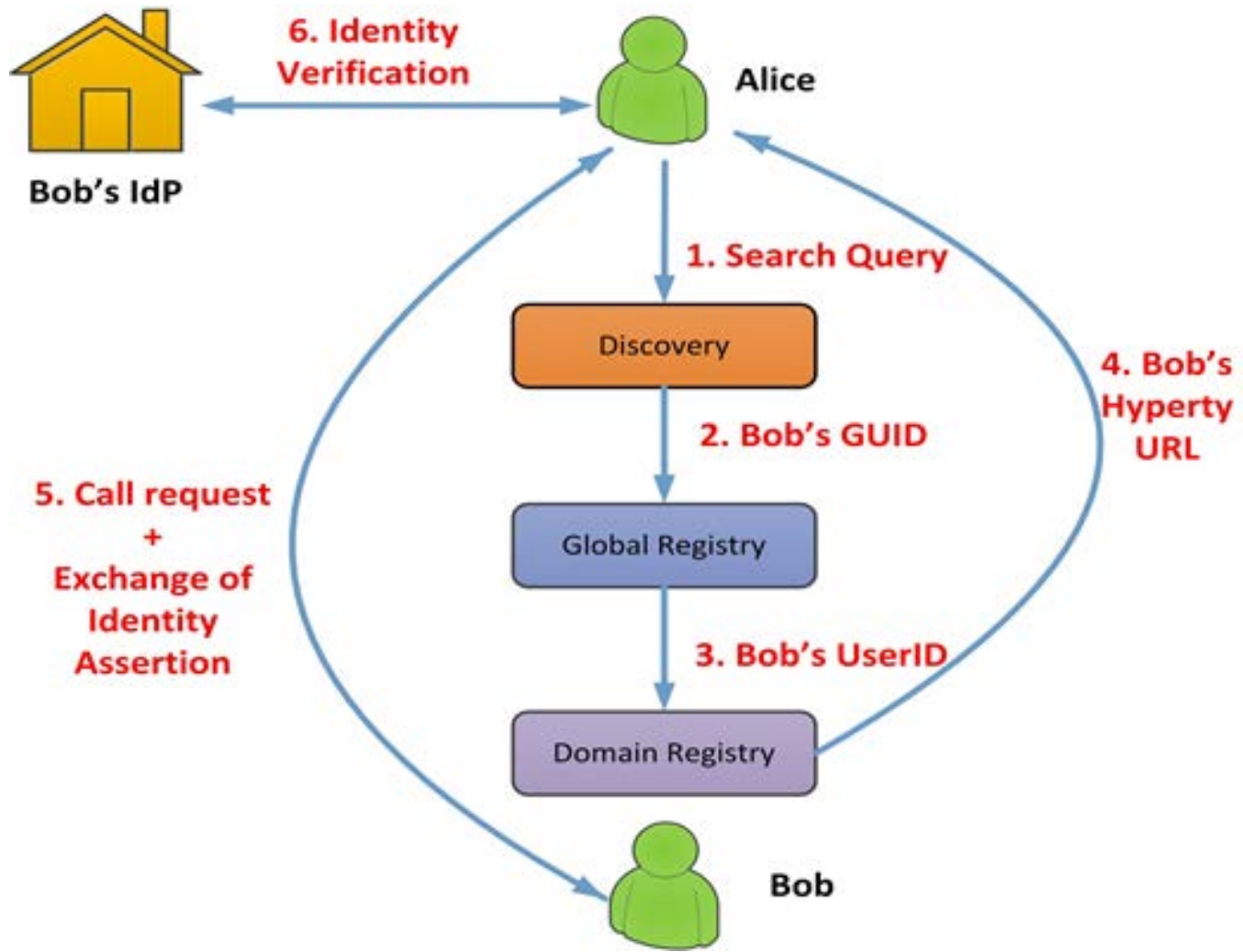


"Alice calls Bob"





Endpoint Discovery





Example in smart city context



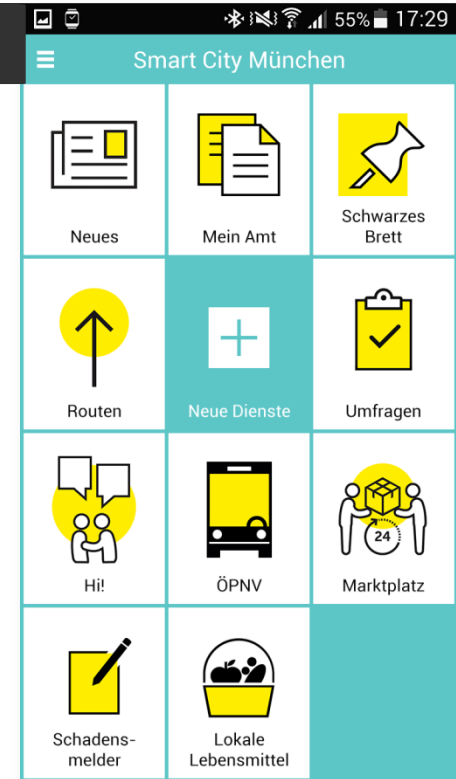
Core elements and homepage of Smarter Together

- Contextual social communication & participation
- Enable cross domain interaction in decentralized networks via the new “Hyperty” concept

- Bring & Manage Your Own Identity
- Trust & privacy mechanisms by design
- Use of social graphs for implied trust

- Discovery mechanism of humans and objects
- Facilitate human and IoT to form “hybrid communication”
- Non private data related business models to avoid the “naked user”

- Smart City as contextual domain

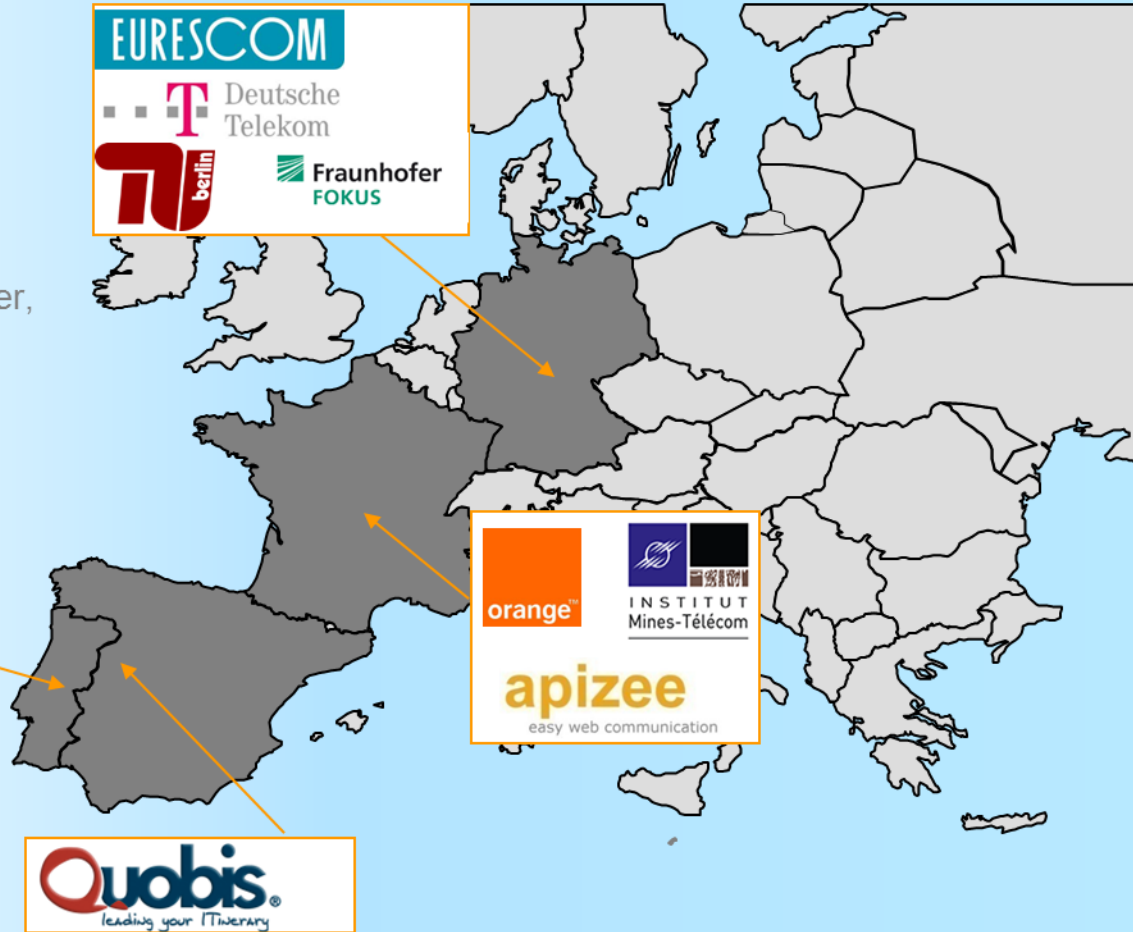
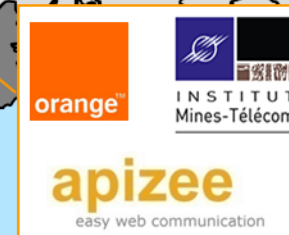




reTHINK Partners



- Operators: Orange, Portugal Telecom, Deutsche Telekom
- SME : Eurescom, Quobis, APIzee
- Academics : IMT, TU Berlin, Fokus Franhofer, INESCID



reTHINK project contributes to the sub call ICT-05-2014 of H2020-ICT-2014 “Smart Networks and novel Internet Architectures” – started in 2015 – June 2017



More information



<https://rethink-project.eu>



https://www.youtube.com/channel/UC4xTKj2ZvhUyJosA_fLeAhg



Demonstrations <https://hysmart.rethink.ptinovacao.pt/>



Available Hyperties (<https://github.com/reTHINK-project/dev-hyperty>)



Quick start to develop Hyperties (<https://github.com/reTHINK-project/dev-hyperty-toolkit>)



Quick start to develop Applications with Hyperties (<https://github.com/reTHINK-project/dev-app>)



Tutorials (<https://github.com/reTHINK-project/specs/blob/master/tutorials/readme.md>)



Complete Specifications (<https://github.com/reTHINK-project/specs>)