

Future Internet of Services From a TAS³ Perspective...

Danny De Cock
TAS³ Project Coordinator

Slides available from <http://godot.be/slides>

Email: Danny.DeCock@esat.kuleuven.be

Future Networked Services

- ❖ Need to converge to an environment which
 - Consists of service providers
 - Data repositories
 - Authentic repositories inherently *trusted* by the user
 - Data aggregators
 - Non-data related service providers
 - That provide services to users and other service providers with
 - Transparent business processes



Questions...

- ❖ Who is responsible for security?
 - There is no demand for secure services
 - Users EXPECT services to be secure
 - Infrastructure is insecure by nature
 - Possibility to eavesdrop is a legal requirement
 - Point-to-Point messaging is inherently insecure
 - End-to-End confidential sessions are discouraged/made impossible
 - Secure End-to-End communication is a session/application layer issue
 - It is all about liability
 - Users, content and service providers deal with mutual distrust with contracts, SLAs, insurances



Questions...

- ❖ How to make security accessible to users and service consumers?
 - Security is built-into the architecture's design
 - No afterthought
 - Sensible default security settings
 - Securely managed, security policies are pushed to service users
 - Easy to understand security configuration
 - Right-grained granularity of security settings



Questions...

- ❖ Are our fundamental security mechanisms (crypto, biometrics, protocols) still adequate?
 - Flexibility is key...
 - Session-based negotiation of protocols, crypto algorithms and cipher suites
 - Authenticity of origin...
 - Usually much more important than long-term confidentiality
 - Time stamping of authenticity proofs with state of the art signing algorithms

Questions...

❖ Consequences of user-centricity?

- Allows a user to become THE bottleneck if consulted whenever personal information is used
- Solution:
 - User-controlled sticky policies
 - Sticky to the data concerned
 - Automatically policy evaluation
 - Data stored by authentic repositories *trusted* by the user
 - Ante factum: repository enforces user's policies
 - Post factum: transparent screening of repository's logs



The Humble Answer... ☺

❖ TAS³ focuses on services

- **T**rusted: it is trusted because you do not have to...
 - Guaranteed through transparency & user-centricity
 - Enforces authorization, trustworthiness, reputation and data protection policies
- **A**rchitecture: technology-independent
 - Integrating today's systems, ready for tomorrow's
 - Connectors with legacy systems
- **S**ecurely: built-in by design
 - End-to-End authentication
 - Point-to-Point confidentiality
- **S**hared **S**ervices: SOA by nature
 - Distributed *things* provide TAS³ services ☺

Questions? 😊

❖ Email:

- Danny.DeCock@esat.kuleuven.be
- info@tas3.eu

❖ Web:

- <http://godot.be>
- <http://tas3.eu>



Business Process



Frontend Service

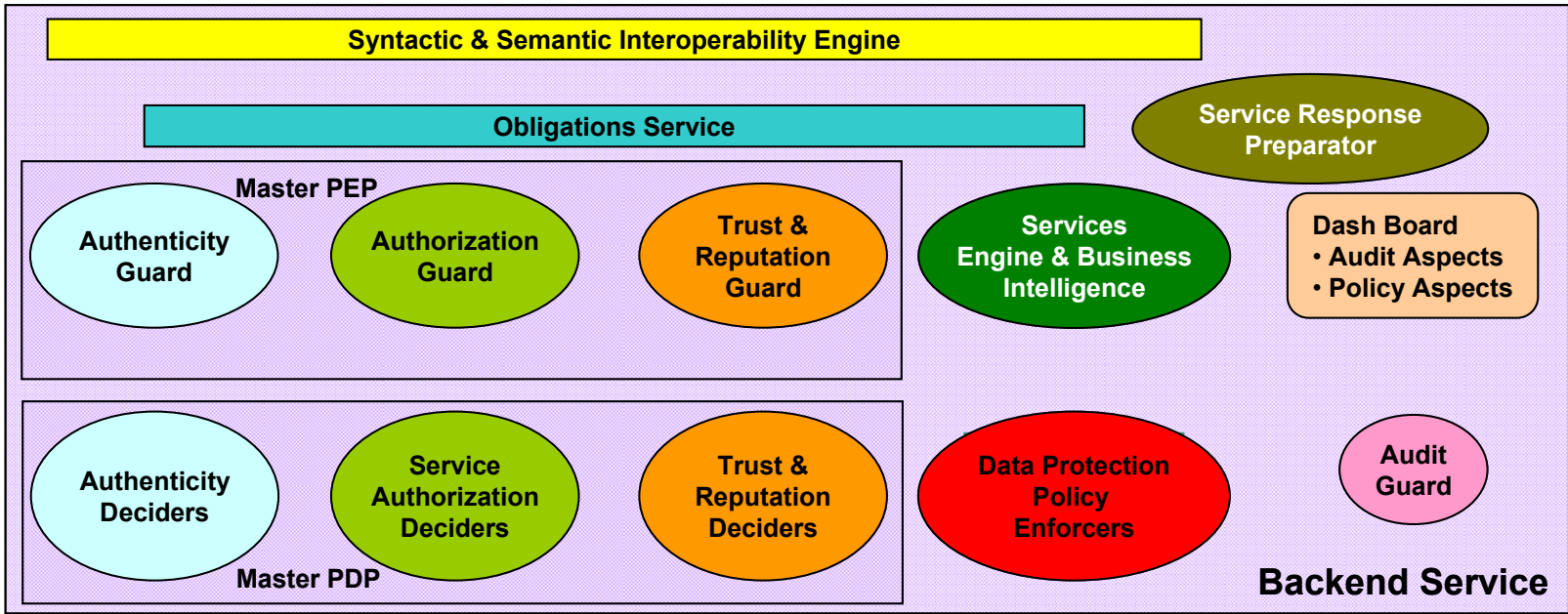
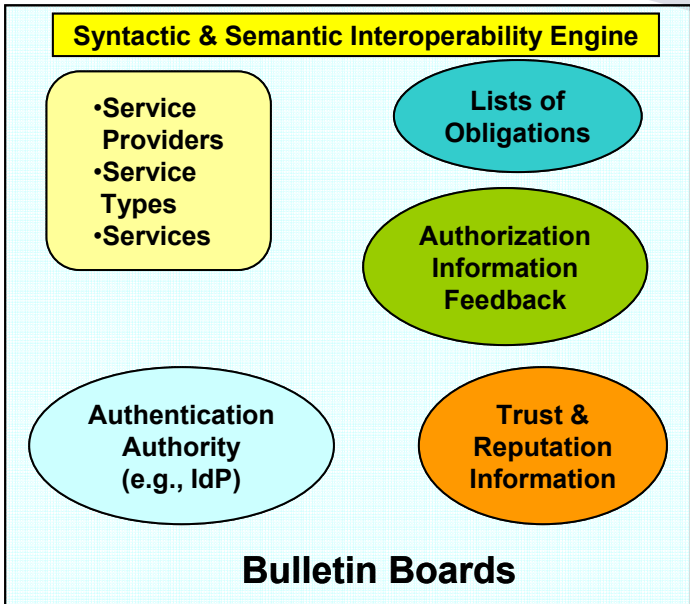
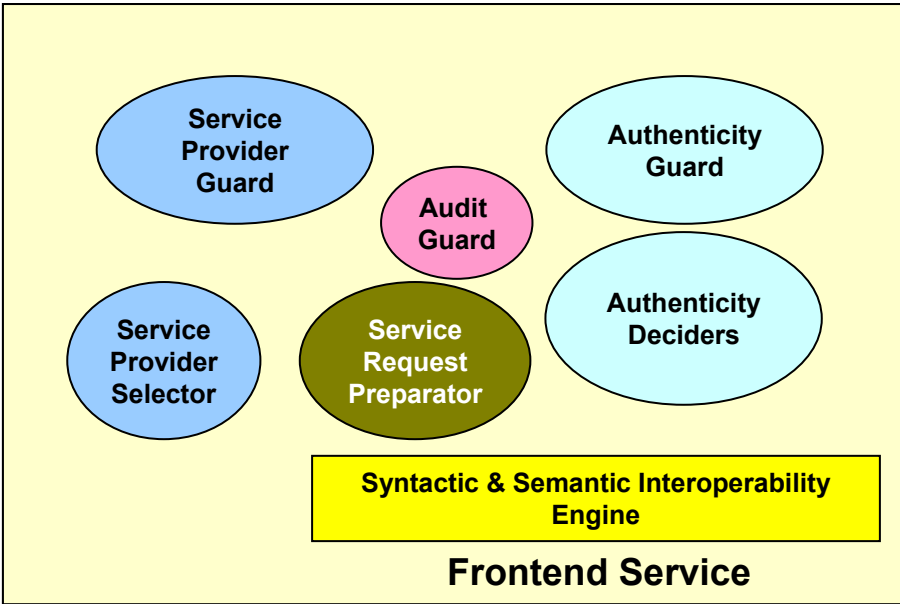
Bulletin Boards

Backend Service

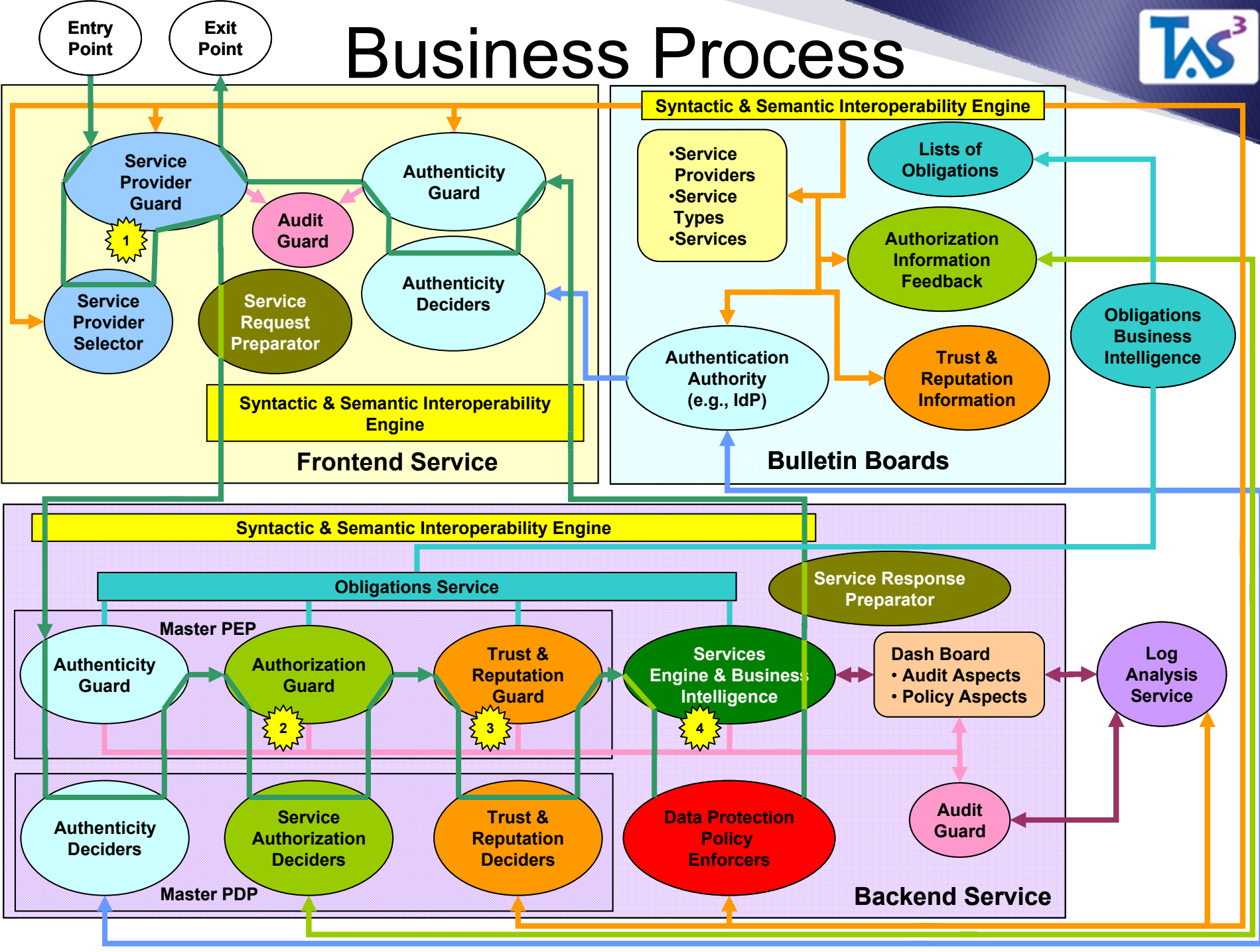
Entry Point

Exit Point

Business Process



Business Process



User-centric Use Cases Employability & Healthcare

