Pilot Auto ID / CAAS Service

A high level overview
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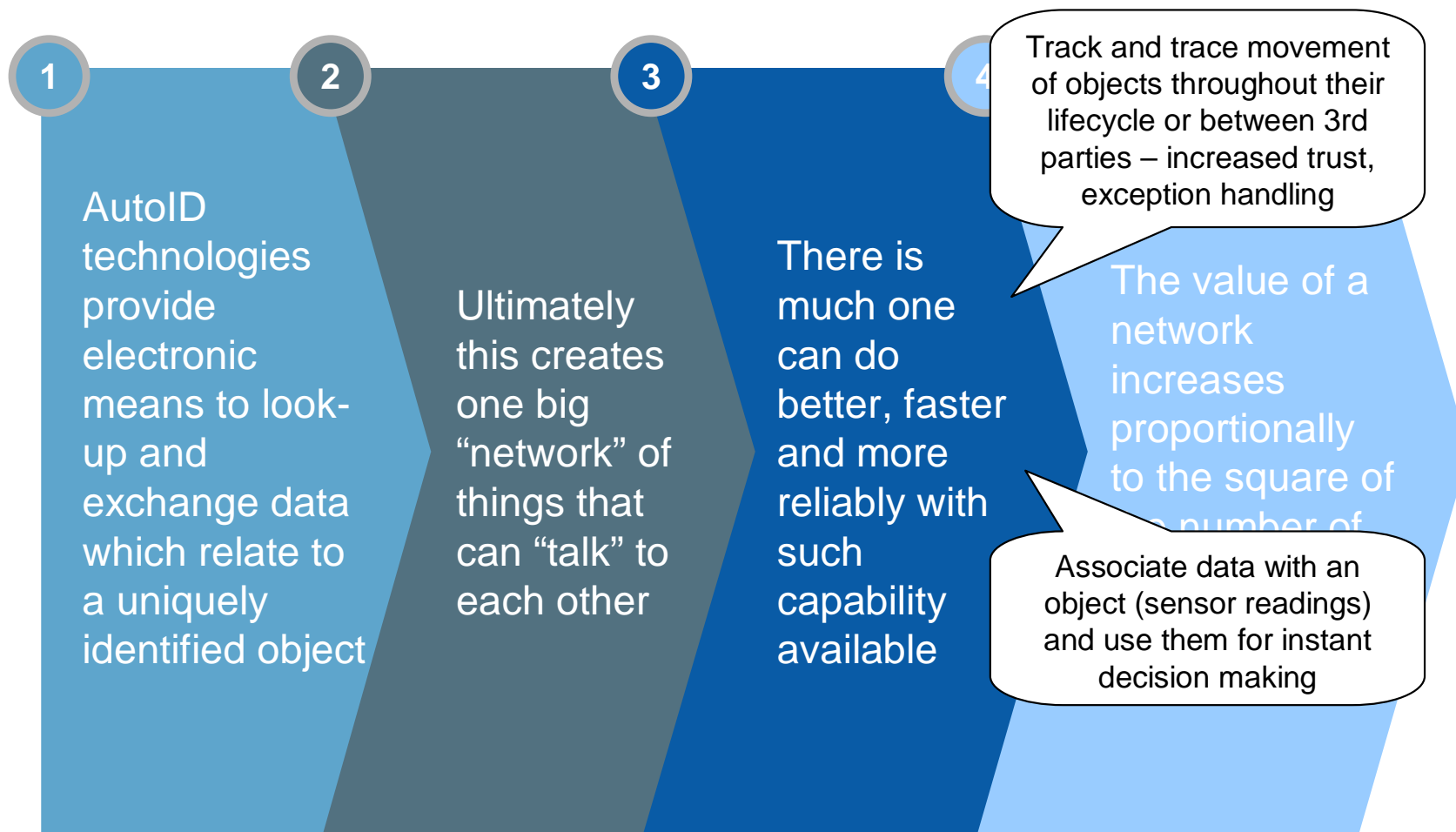
Communication services

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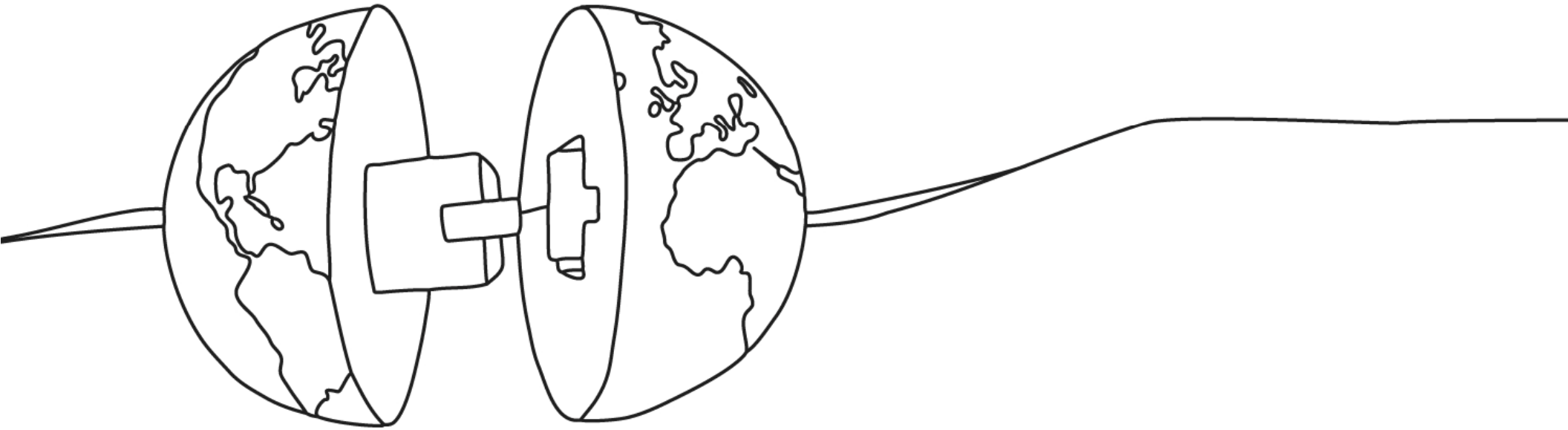
Challenges associated with "Traceability" in the air transport industry

- Enormous and always increasing volumes of transactions / entities to track
  - Take-off & Landings, Passengers, Baggage, Freights, ULDs, etc.
- Real-time tracking of « entities » in motion
  - Vehicles, fleets, baggage, people, etc.
- One of the highest level of accuracy and security is required
  - Safety requirements, Security constraints, Operation efficiency
- Process management & Decision Making involves several different actors
  - Inter-operability of tracing systems and sharing of information.

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Can new technology respond to the air transport industry's business needs?

1 AutoID technologies provide electronic means to look-up and exchange data which relate to a uniquely identified object

2 Ultimately this creates one big "network" of things that can "talk" to each other

3 There is much one can do better, faster and more reliably with such capability available

4 The value of a network increases proportionally to the square of the number of

Track and trace movement of objects throughout their lifecycle or between 3rd parties – increased trust, exception handling

Associate data with an object (sensor readings) and use them for instant decision making
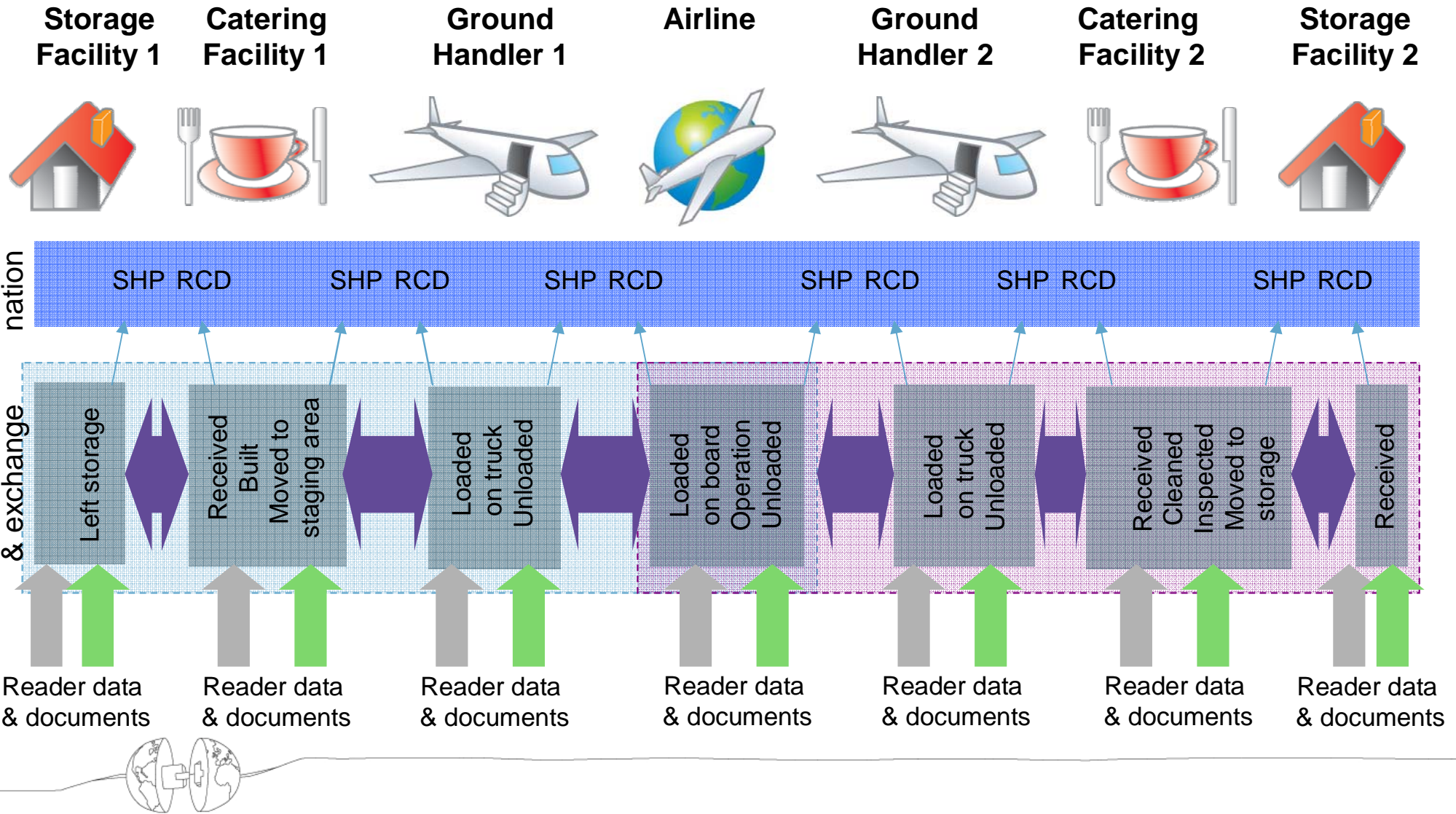
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Why does the air transport industry need community Auto ID services ?

- The air transport industry is deeply integrated

- Most (trial) Auto ID projects are local in nature and lack integration

- Major benefits from AutoID technologies can only be derived when necessary data is shared between 3rd parties

- Proof of concept is better and more flexible than a long theoretical study

➔ **We believe that common, shared and standards-based approach will allow ATI to realize major benefits of the new technology**
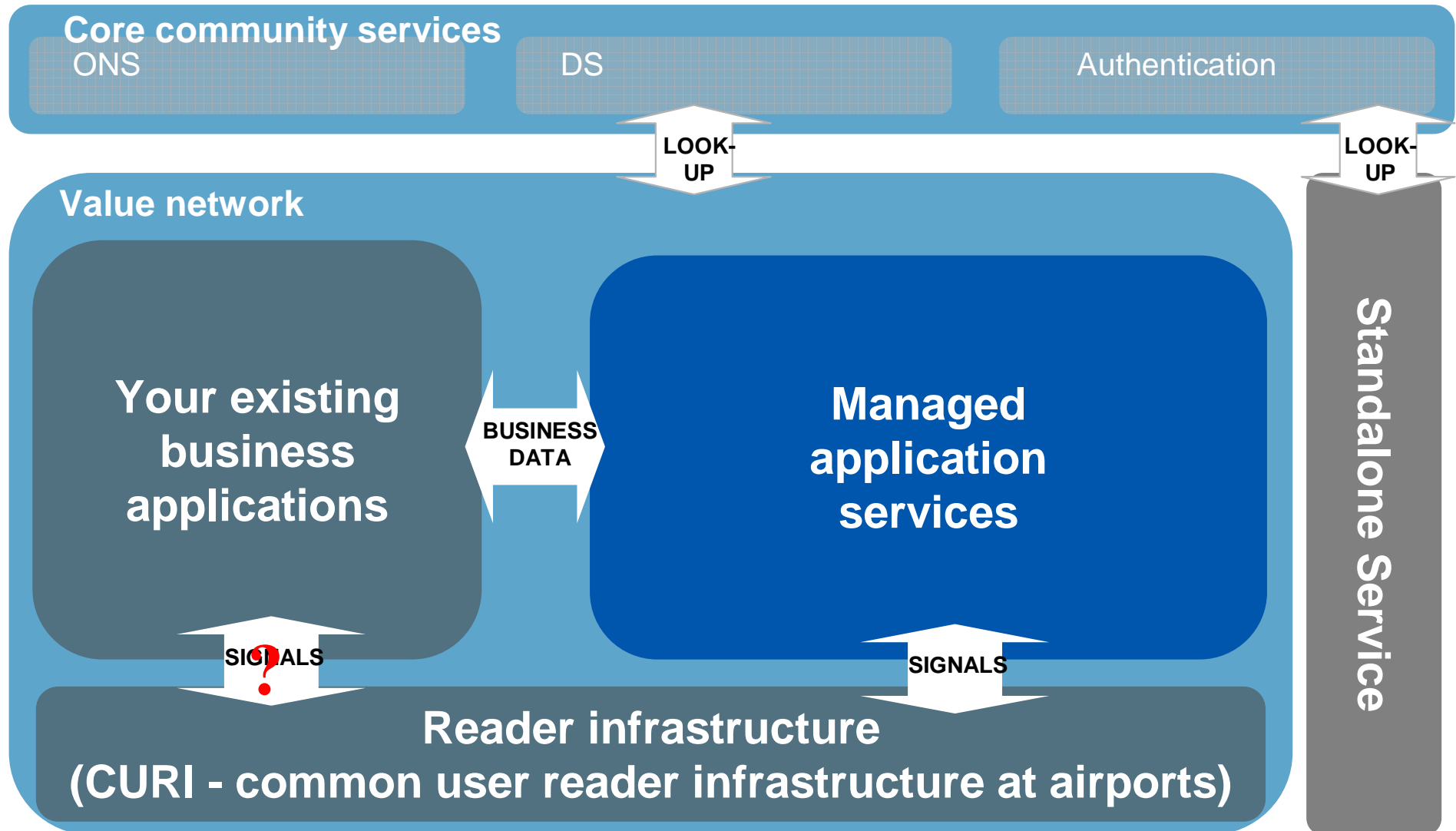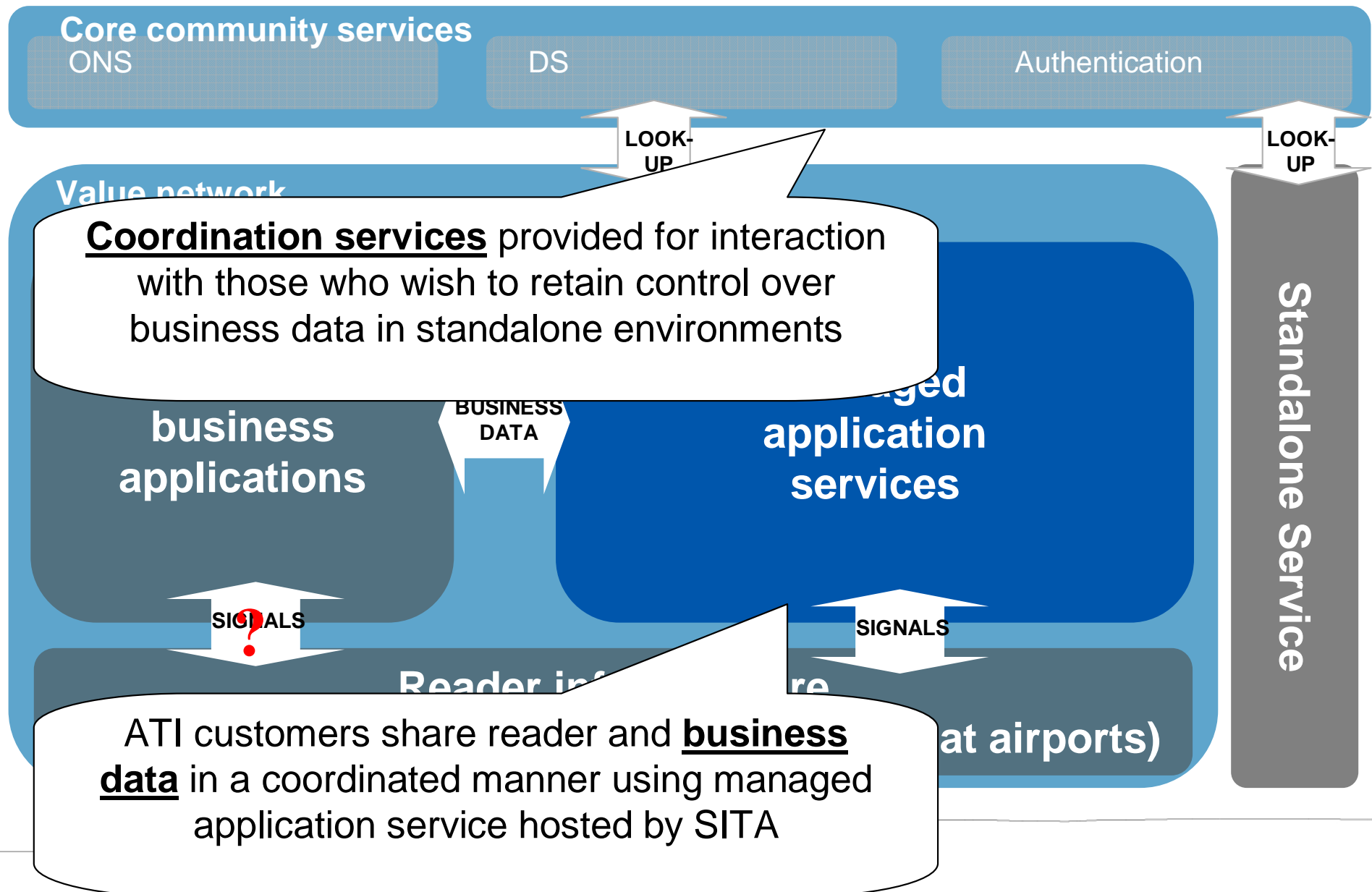
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Trolley tracking example

Storage Facility 1   **Catering Facility 1**   **Ground Handler 1**   **Airline**   **Ground Handler 2**   **Catering Facility 2**   **Storage Facility 2**

Coordination

SHP RCD   SHP RCD   SHP RCD   SHP RCD   SHP RCD   SHP RCD

Business data & exchange

- Left storage
- Received / Built / Moved to staging area
- Loaded on truck / Unloaded
- Loaded on board / Operation / Unloaded
- Loaded on truck / Unloaded
- Received / Cleaned / Inspected / Moved to storage
- Received

Reader data & documents   Reader data & documents   Reader data & documents   Reader data & documents   Reader data & documents   Reader data & documents   Reader data & documents

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Sharing data & information is the key to improve ATI processes

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Pilot Auto ID Service - Conceptual architecture

Core community services

ONS

DS

Authentication

LOOK-UP

LOOK-UP

Value network

Your existing business applications

BUSINESS DATA

Managed application services

Standalone Service

SIGNALS

SIGNALS

**Reader infrastructure
(CURI - common user reader infrastructure at airports)**

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Pilot Auto ID Service - Conceptual architecture

Core community services

ONS | DS | Authentication

LOOK-UP | LOOK-UP

Value network

Coordination services provided for interaction with those who wish to retain control over business data in standalone environments

business applications

BUSINESS DATA

...aged **application services**

Standalone Service

SIGNALS | SIGNALS

Reader in...ure ...(at airports)

ATI customers share reader and **business data** in a coordinated manner using managed application service hosted by SITA

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Managed service and CAAS architecture

(simplified)

Browser

Electronic documents
(XML, xls, csv)

3rd party applications
(SAP, WMS, ERM)

Web Portal

Interfaces
(HTML, web services, Java & other API's)

Electronic documents

Context Aware Application Service

SixD engine

RFID readers
Barcode readers
Sensors & actuators
Networked devices
& other M2M adapters
Hardware firmware
Hardware SDK
Adapter
• Framework
• Universal interface

M2M integration manager

Signal collector
Signal & information
Event manager
Business event manager
Receptionist & publisher
Business application
Engine
Conditional rule agent
…

Database
(MaxDB or Oracle)

Clean reader signals

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Core community services

- Core services as defined in the EPC Global architecture
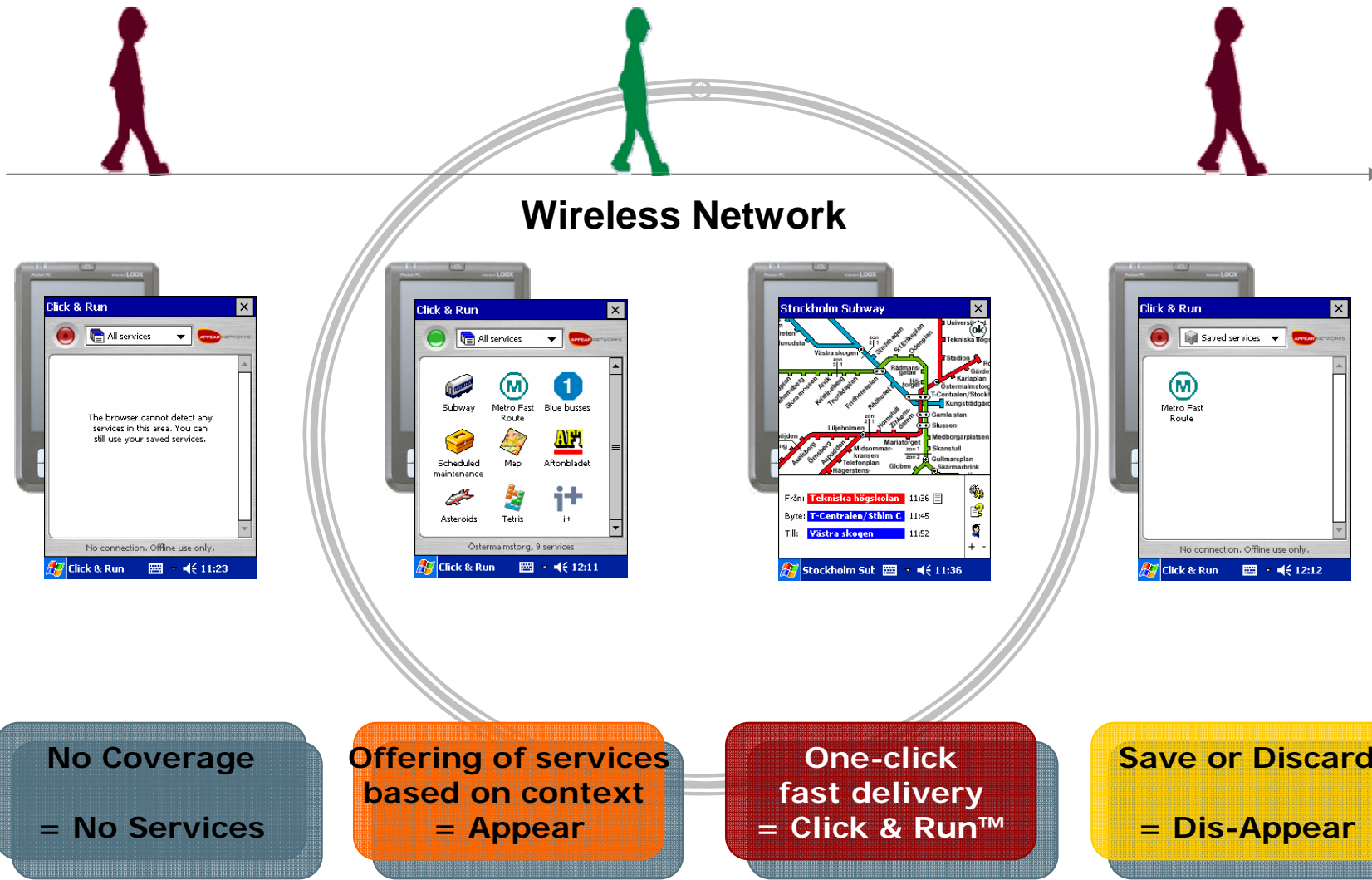- Controlled sharing of minimum necessary object- and transaction-related data

Core community services

Object Naming Service

Discovery Service

Authentication

DNS-like service that allows to lookup the URL of the owner of a given ID

"Thin" registry of relevant transactions (what, when, who, where)

User authentication based on industry accepted standards

Who issued it? What is the discovery service tracking it?

Interested parties have a controlled access to minimum necessary object tracking/tracing related information

Compliant with ATI standards where such exist (ATA DSWG, Certipath)

~object registry

~event registry

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Context Aware Application Services (CAAS)

- Context - The information that describes the situation of a person or entity

- Context categories
    - User profile
    - Location
    - System / network
    - Environment
    - History / time

- Context can be dynamic

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Usage scenario for Context Aware provisioning

Wireless Network

No Coverage	Offering of services	One-click	Save or Discard
= No Services	based on context	fast delivery	= Dis-Appear
	= Appear	= Click & Run™	

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Pilot Auto ID Service – Technology partners

Managed application service running on SixD application from VIAgents

Afilias is operating ONS and Discovery Service on SITA's behalf

Context Aware Application Services (CAAS) running on Appear Context Engine from Appear

Key features

- Managed service designed to warn about irregularities so they can be fixed before they become a major problem
  - Proactive notification when data "out of bounds"
  - No coding, Fast ramp-up by parameter configuration of existing application
- Coordination services separate from business data
  - Track & trace objects across systems used by 3rd parties even outside the SITA managed service
- Leverages SITA applications and knowledge
  - Integration with baggage solutions
  - Integration with e-forms for complete part lifecycle management
- Community based business data sharing using managed service
  - Common reader infrastructure, controlled data sharing
  - Managed by independent trusted user-owned party
- Open, standards-based architecture
  - EPCIS interface for sharing with 3rd parties, support for legacy messaging
- Hi level of security and authentication based on industry standards
- Mobility and context aware support

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Why should you pilot the AutoID service?

- Obtain benchmark data to plan for longer term improvements
- Test whether the technology can deliver improvements
- Train your staff to use the new technology
- See for yourselves how easy (or difficult) it is to deploy
- Test new services in partnership
  - Learning costs are shared between trusting parties

➔ **To evaluate the benefits of AutoID technology at relatively low cost and risk**

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Track and trace problems recommended for a pilot

- Trolleys between locations
- ULDs between locations
- Other assets on site or between locations
- Baggage as it moves between locations
- Spare parts as they move through supply chain

➔ **The process choice is yours whether or not listed above. SITA will provide baseline business rules for the AutoID application for the above processes**

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Sharing of pilot workload and costs

- Use of the Auto ID pilot infrastructure is free of charge
  - Object naming service
  - Discovery service
  - Digital certificates
  - AutoID application with baseline business rules

- CAAS cost sharing
  - Service = free
  - Proxy to be paid

  ➔ **These conditions valid until end 2007**

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Sharing of pilot workload and costs (2)

- ## Your responsibility

    - Installation and operation of physical RFID infrastructure (readers, printers)

    - Choice and documentation of business rules for pilot configuration

    - Provision of baseline data for performance measurement

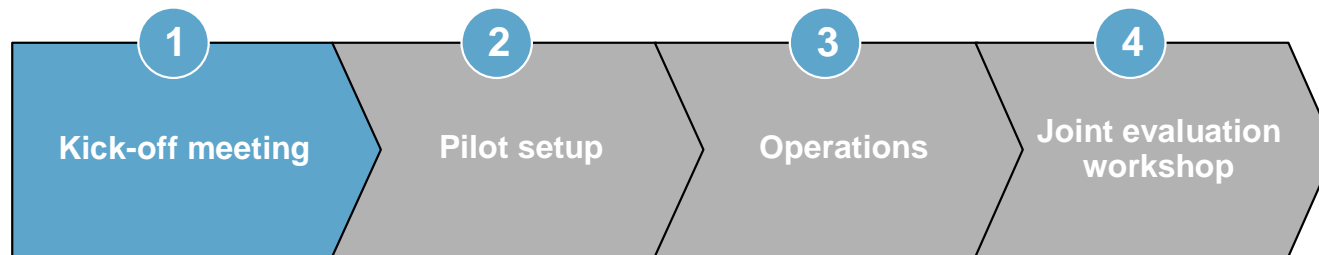**➔ SITA's AutoID pilot conditions are valid until end 2007**

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Sharing of pilot workload and costs (3)

- Specific services subject to professional services fee
  - Bespoke setup part of the pilot infrastructure
  - Integration of reader infrastructure with AutoID application (if not on the list of compatible devices)
  - Configuration of AutoID application to accommodate specific business rules
  - Any other services required (i.e. support with elements under "your responsibility")

  ➔ **SITA's AutoID pilot conditions are valid until end 2007**

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Sample project plan

1	2	3	4
Kick-off meeting	**Pilot setup**	**Operations**	**Joint evaluation workshop**

- ☑ **Typical set-up = 2 to 4 weeks only**
- ☑ **No code writing**
- ☑ **Typical pilot lasts 2-3 months**

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About SITA, more information

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SITA: Who we are

We are a community of over 600 airline, airport, aerospace, cargo and GDS members and over 1800 customers

We are unique in delivering integrated communication and IT solutions, on a global basis, for the air transport industry. We do this through a single supplier relationship

We are local, globally, with a presence in 220 countries and territories

- Over 3,000 staff worldwide
- 140 nationalities, speaking over 70 languages

→ **We are the world's leading provider of IT business solutions and communication services for the air transport industry**

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Our impact on the community and industry

Community systems

.aero, Aviareto, Worldtracer, Type B, BagMessage,
Cargo Community System

Shared infrastructures

Airport Hubs, AirportConnect, CUTE, CUSS,
SITA Voice Exchange

Industry standards

ADS B, Aerospace ID, SPEC2000, Type X

→ **We continue to lead the way in providing innovative solutions and community systems that change the way the industry works**

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Want to know/discuss more?

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Collaborative web site for Pilot Auto ID project
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