



GS1 EPC/RFID Technology Group Meeting 2

21 February 2007

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Agenda – Afternoon Session

Afternoon Session

1:00pm	Lunch ...in parallel SCKC RFID / Smartshelf tours	
2:00pm	Welcome	Mark Fuller, GS1 COO
2:30pm	Local Progress & Technical Update	Sue Schmid, GS1 GM Standards
3:00pm	EPC Strategy & Framework	Richard Jones, GS1 GM Ser Del Tony Edwards, Director, RFIDEas
3:30pm	Developing the Business Case & Forward Agenda	Mark Fuller, GS1 COO Peter Chambers, GS1 Mgr Projects
4:00pm	Solution Partner Updates	Joseli Munive, GS1 Alliances Manager
4:30pm	Open Forum Discussion	All
5:00pm	Close	





GS1 EPC/RFID Technology Update – Technical Update

GS1 Australia EPC/RFID Advisory Group
Sue Schmid, GM - Standards Development
21th February 2007

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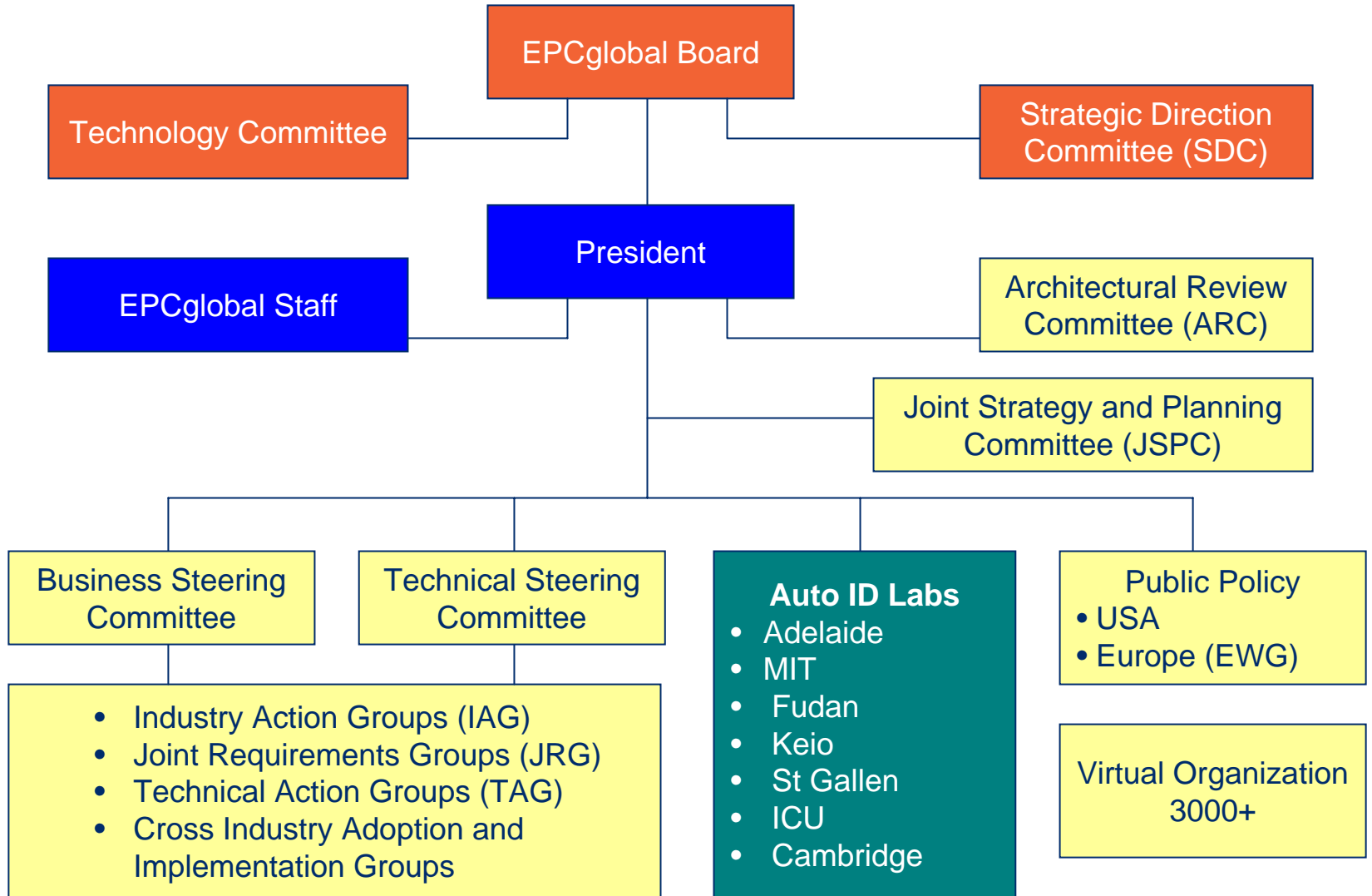


Agenda – Local/Global Update

- EPCglobal Technical Activities
- Local Update
 - 4 Watt
 - Privacy Code of Practice



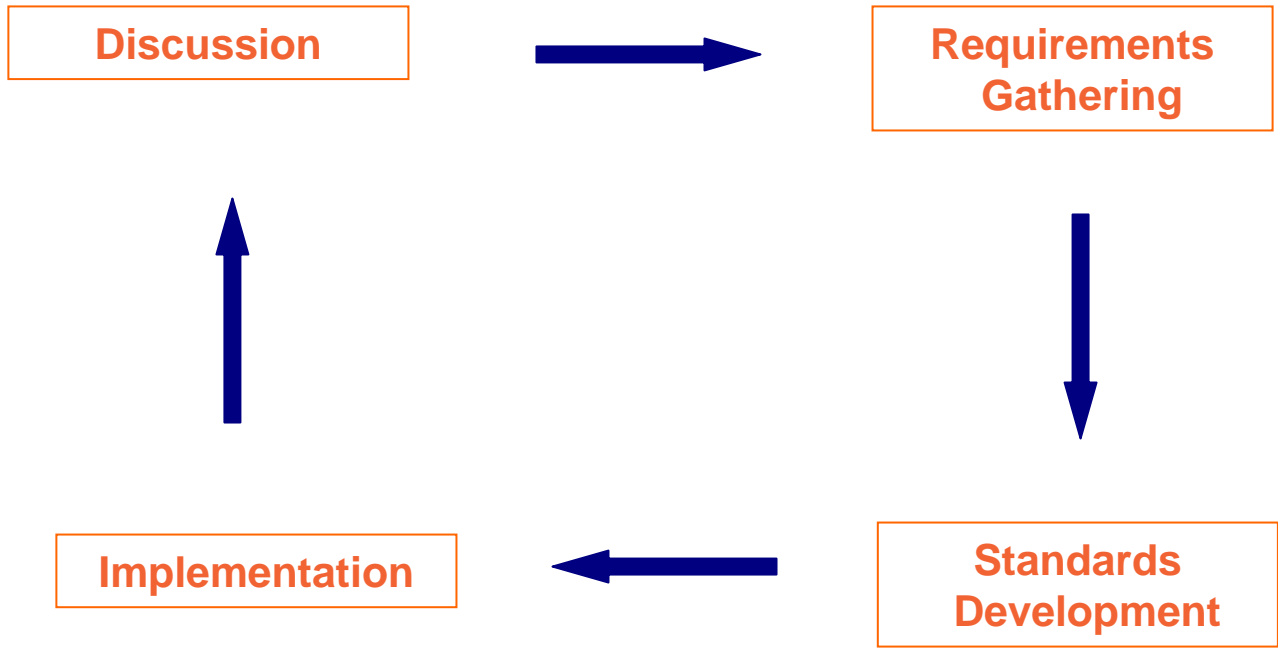
EPCglobal Organisation Structure



Making our Vision a Reality



Standards Development Process





EPCglobal Standard Development Process

Discussion Groups

No Opt-In or IP required
Open to non-EPC subscribers only
end users by invitation only

Industry Action Groups (IAG)

Open ONLY to EPCglobal Subscribers
Voluntary inclusion via subscribers area

Technical Action Groups

Opt-In and IP IS required
Open ONLY to EPCglobal Subscribers

Joint Requirements Groups (JRG)

Opt-In and IP IS required

Joint Working Groups

No Opt-In or IP required
Open ONLY to EPCglobal Subscribers



Helicopter view of EPCglobal Activities... Discussion Cycle

Discussion Groups (DG)

- Consumer Electronics
- Automotive
- Chemical
- Aerospace & Defence
- Fibre Packaging



Industry Action Group (IAG)

- Retail Supply Chain (Apparel, Fashion and Footwear/Media and Entertainment)
- Health and Life Sciences (Industry Adoption Task Force/Track and Trace/Serialisation Task Force)
- Transportation and Logistics (Transportation Work Group / 4 Walls Work Group / Import Export Work Group / Integration Work Group)
- Multi-Sourcing EPC Assignment Interest Group





Helicopter view of EPCglobal Activities...

Hardware Action Group (HAG)

- UHF Air Interface 1 and 2
- HF Air Interface
- Tag, Label, Reader and Printer Performance
- Product Data Protection ad hoc Committee
- Testing and Certification
- Gen 2 Interoperability

Software Action Group (SAG)

- Drug Pedigree Standard
- EPCIS 1.0 Specification
- Reader Operations' Low Level Reader Protocol (LLRP 1.0)
- Filtering and Collection
- Tag Data & Translation Standards

Joint Requirements Group (JRG)

- Item Level Tagging
- Sensors and Battery-Assist Passive Tagging
- Tag Data – User Memory
- Active Tagging
- Data Exchange
- Drug Pedigree Messaging

Cross Industry Adoption and Implementation (AIG)

- Implementation Sharing
- European Adoption Program
- Asian Adoption Program



EPCglobal Major Highlights

- Over 1,000 EPCglobal subscribers
 - 12 major industry sector
 - 51 industry segments
- Ratification of:
 - Electronic pedigree standards
 - Reader Management standards
- Joint Action Group Meeting held in Orlando Florida January 2007

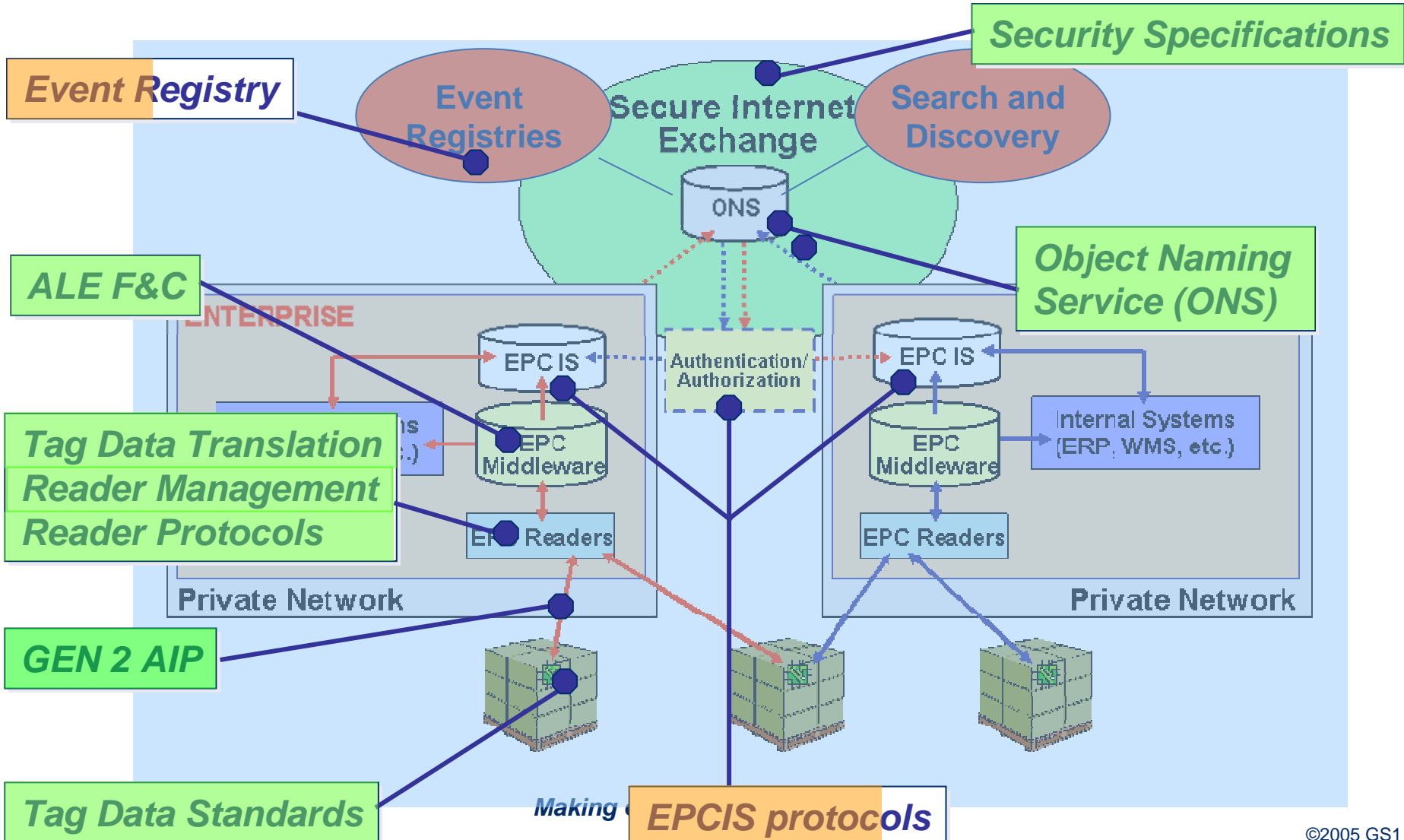


EPCglobal Year Ahead 2007-2008

- Completion of hardware, software and data interfaces standards set
- Ratification of the following standards is expected
 - Application Level Event (ALE), Filtering and Collection 1.1
 - Reader Operations (DCI) 1.0
 - UHF Item Level Tagging 1.0
 - Sensor and Battering Tagging 1.0
 - Tag Data Standard 1.3
 - HF Item Level Tagging 1.0
 - EPCIS Version 1.2 (ePedigree, Traceability)
 - Active Tagging 1.0
- Completion of Transportation and Logistics Pilot Phase 2
- Development of a Track and Trace Standard that addresses need for pedigree on demand
- Formation of Industry Action Groups for
 - Consumer Electronics
 - Aerospace and Defence
 - Chemical Industry



EPCglobal Network standards





Helicopter view of EPCglobal Activities...

Discussion Groups (DG)

- Consumer Electronics
- Automotive
- Chemical
- Aerospace & Defence
- Fibre Packaging





Consumer Electronics Discussion Group

- **Focus for industry is on:**
 - Warranty
 - After Sales Service
 - Environmentally friendly disposal of product
 - Traditional Track and Trace
- **Attention to increased user memory is major requirement**
- **Second discussion Group was held in Seoul early December 2006**
- **Next face to face meetings:**
 - European Retailers 5th March 2007, London, UK
 - European Manufacturers 7th March 2007, Tilburg, Netherlands



Automotive Discussion Group

- Lead for this group accepted by GS1 Germany
- Volkswagen continues to plan for a RFID pilot in logistics
- GS1 US working with Ford Motor Company



Chemical Discussion Group

- First Summit held in Brussels, Belgium 18th -19th January, 2007
- Major Chemical representatives participated
- Asian Chemical Industry Summit to take place on 1st March 2007 in Tokyo



Aerospace & Defence Discussion Group

- First Summit held in Brussels, Belgium 16th -17th January, 2007
- Participation from 60 people representing 35 companies
- Next discussion group to be held 27th February 2007 in Tokyo



Fibre Packaging Discussion Group

- Sweden initiated group with a view to establishing global standards
- First discussion group was held in Stockholm 1st - 2nd of February





Helicopter view of EPCglobal Activities Requirements Gathering

Industry Action Group (IAG)

- Retail Supply Chain
 - Apparel, Fashion and Footwear
 - Media and Entertainment
 - Reusable Transport Items
- Health and Life Sciences
 - Industry Adoption Task Force
 - Track and Trace Working Group
 - Serialisation Task Force
- Transportation and Logistics
 - Transportation Work Group
 - 4 Walls Work Group
 - Import Export Work Group
 - Integration Work Group
- Multi-Sourcing EPC Assignment Interest Group



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Retail Supply Chain

- Apparel Fashion and Footwear Interest Group
 - Supply Chain Processes (SCP) and Store Level Operations met in January at the Joint Requirements Group (JRG) in Orlando
 - Work of these groups nearly complete and now starting to define their technical requirements for tags and reader systems.
- Media and Entertainment Group
 - Face to face meeting held at end of January in Oakland, California
 - Initial information gathering stage

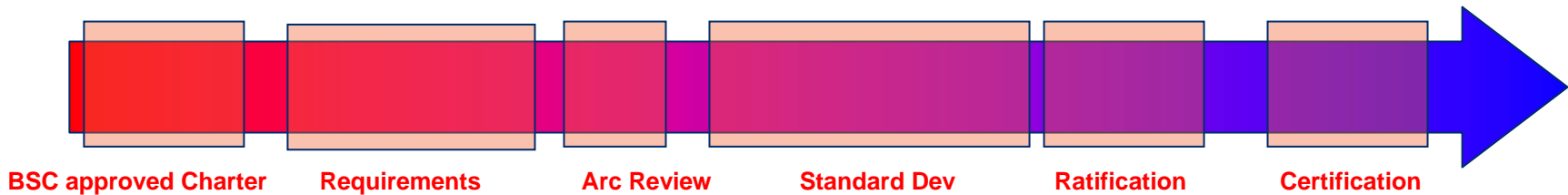
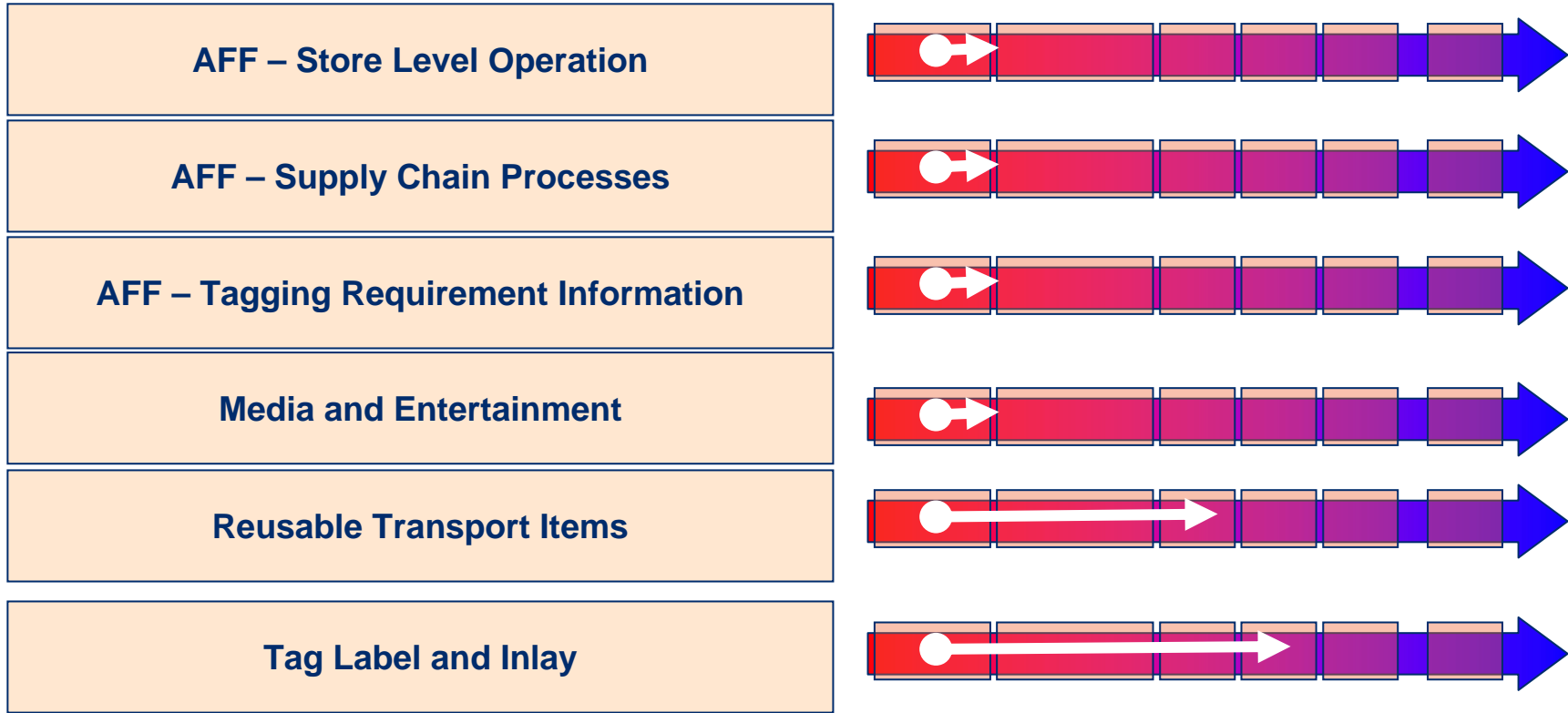


Reusable Transport Items

- Final guideline presented to Business Steering Committee, Technical Steering Committee and Architecture Review Committee
- Three of Five scenarios defined for tagging RTI's can be implemented today
- Architecture Review Committee asked for scenarios to support the other two in an effort to align with the current interface network.
- Once complete, group will disband



Retail Supply Chain - IAG



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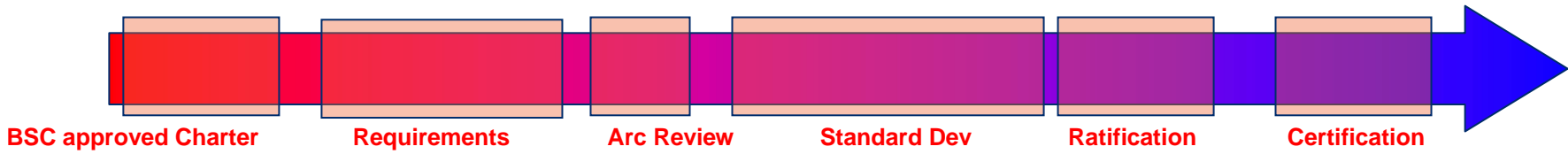
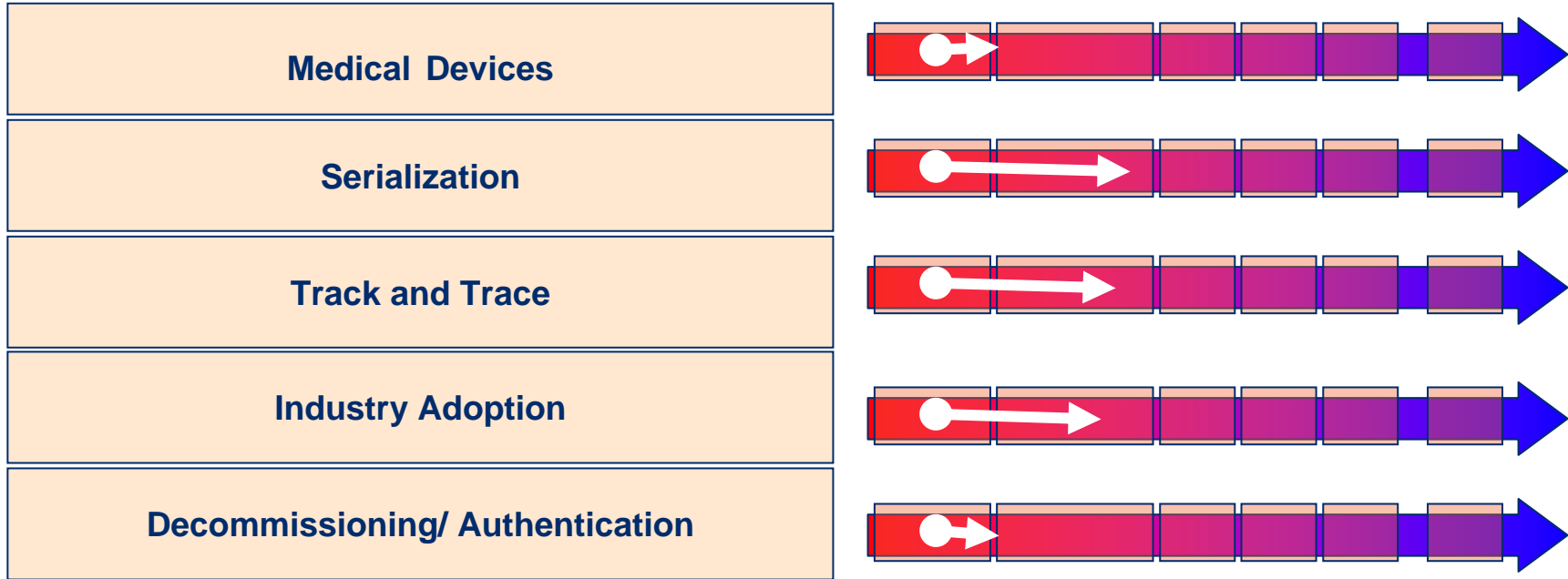


Healthcare and Life Sciences

- Industry Adoption Task Force
 - Face to Face meeting in Orlando in October
 - Continuing work on Healthcare Industry Adoption Roadmap
 - 20 attendees with positive and stakeholder balanced participation
- Track and Trace Working Group
 - Nearing completion of the core vocabulary alignment with Retail Supply Chain Industry Action Group
 - Remaining process mapping to include:
 - product recalls
 - third party logistics
 - Authentication
- Serialisation Task Force
 - Agreed with SGTIN-96 standard



Health and Life Science - IAG



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Transportation and Logistics

- Met in January 8-11th, 2007 at Joint Requirements Group (JRG) Orlando.
- Phase 1 of the Global Pilot is set
 - All parts in place to track containers from the port of HK to port of Japan
 - Phase 2 will track shipments through sea and air from Shanghai to Long Beach, California
- Transportation working group
 - Conveyance Asset Tag (CAT) requirements have been completed
 - The Active Conveyance Asset Tag (XCAT) have been defined and will be submitted to the ARC



Transportation and Logistics cont...

- 4 Walls work group
 - Identified 10 use cases as priority, key performance indicators being defined in the sub-categories Technical, Process and Conditions
 - Working with Pilot task force to define key performance indicators
- Import Export work group
 - Charter being revised with focus on import / export security issues
 - Meetings have been held with Japanese Customers and Department of Homeland Security to encourage participation in the global pilots



EPCglobal TLS – Hong Kong Pilot

Objective

- EPC/RFID can be application in TLS from HK to Japan port
 - Interoperability among multiple trading partners and service providers
 - Use of the EPCIS
 - Proof of concept using active RFID technologies serving as foundation for Phase Two Pilot
 - Prepare and investigate shipment info used for import/export declaration

Scope

- Trade lane Hong Kong to Japan, via ocean container

Time Line

- February , 2007

Participants

- Maersk Logistics, Wan Hai, NYK, Mitsui/Nippon Express, Savi Technology, SIO

Funding

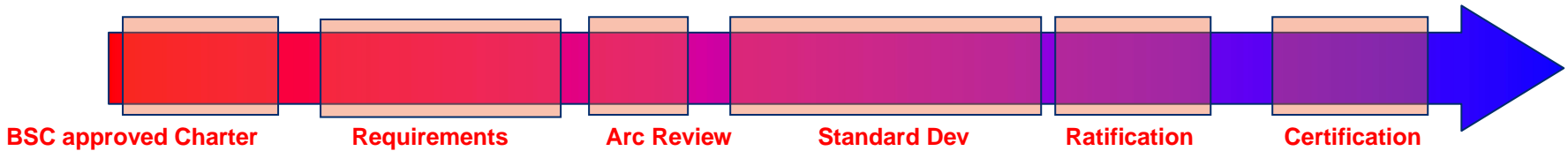
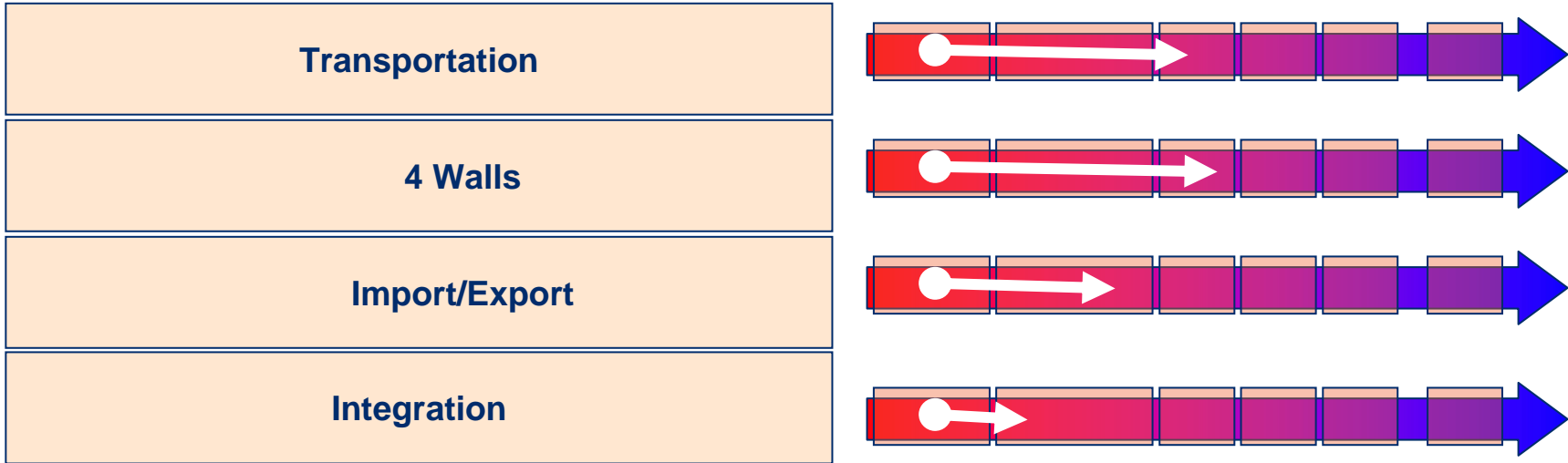
- **METI** (Ministry of Economy, Trade and Industry)

Cargo / Freight

- Apparel / Fashion



Transportation and Logistics - IAG





Multi-Sourcing EPC Assignment Interest Group

- Met in January 8-11th, 2007 at Joint Requirements Group (JRG) Orlando.





Joint Requirements Group (JRG)

- Item Level Tagging
- Sensors and Battery-Assist Passive Tagging
- Tag Data – User Memory
- Active Tagging
- Data Exchange
- Drug Pedigree Messaging



Item Level Tagging

- Met in Orlando
- Two work streams created
 - Finalising the supply chain mapping
 - Revision of the Item Level Tagging Phase 1 final document



Sensors and Battery-Assist Passive Tagging

- Finalised user requirements matrix after review from end user interviews
- Sensors group will merge survey question list with Active Tagging



Tag Data – User Memory

- Extensive set of user requirements for User and Tag Identification memory
 - Most likely will have an impact on the Tag Data Standards v1.3
- The group is seeking for EPC subscribers and non-subscribers to fill out the automated questionnaire that can be accessed on EPCglobal website

http://www.epcglobalinc.org/tech/mem_q/



Active Tagging

- Requirements matrix has been completed and being merged with the Sensors and Batteries group for a common survey
- Requirements are being collected and collated from the joint requirements group members

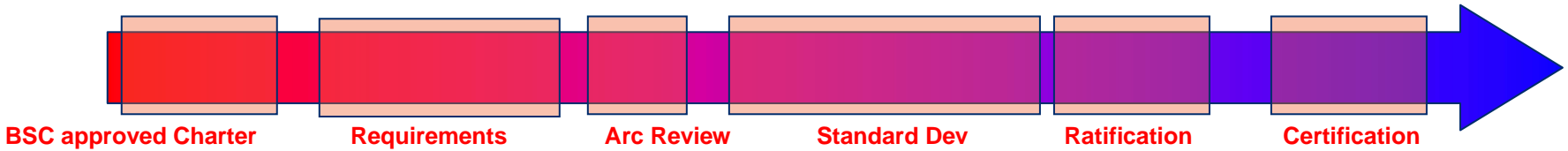
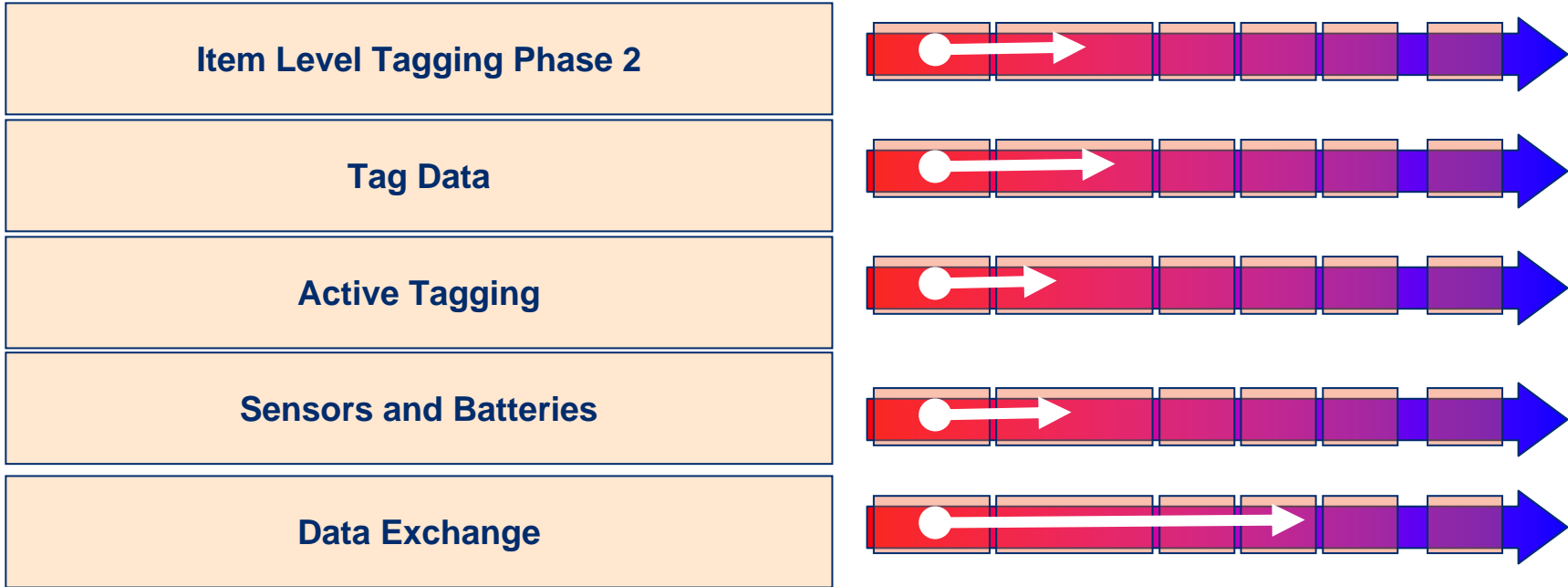


Data Exchange

- Formed at the end of 2006
- Charter focuses on the development of a EPCIS Core Business Vocabulary for use with EPCIS specification
 - Aims include the harmonisation of terminology of:
 - business processes
 - product dispositions
 - Location master data across industry verticals



Joint Requirements Group





Helicopter view of EPCglobal Activities Standards Development

Hardware Action Group (HAG)

- UHF Air Interface 1 and 2
- HF Air Interface
- Tag, Label, Reader and Printer Performance
- Product Data Protection ad hoc Committee
- Testing and Certification
- Gen 2 Interoperability

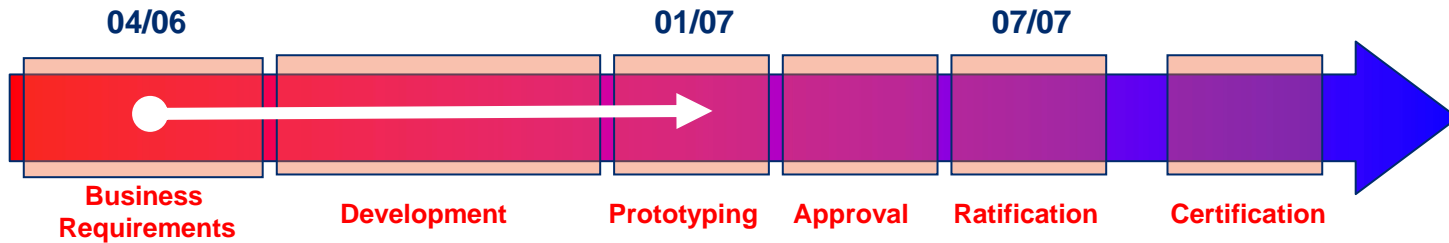
Software Action Group (SAG)

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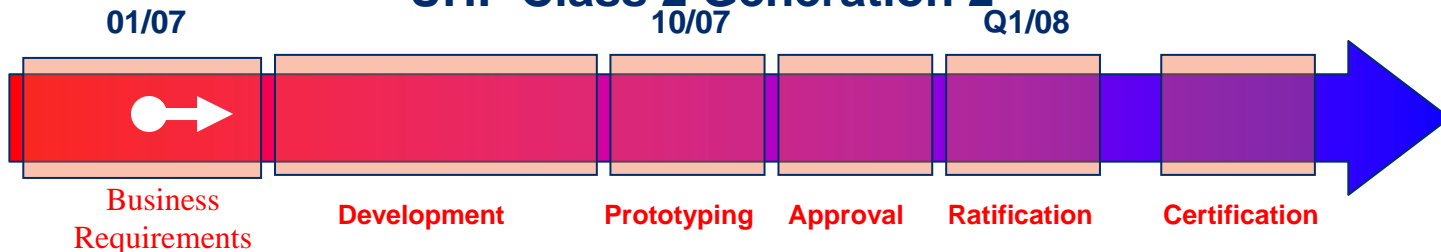
UHF Air Interface

- Last call working draft will include simple extensions to the existing Gen2 specification
- Draft now in review by working group
- Currently projected to reach last call working draft within next 2 months

UHF Class 1 Generation 2 Ver 1.2 (Item level Tagging)



UHF Class 2 Generation 2



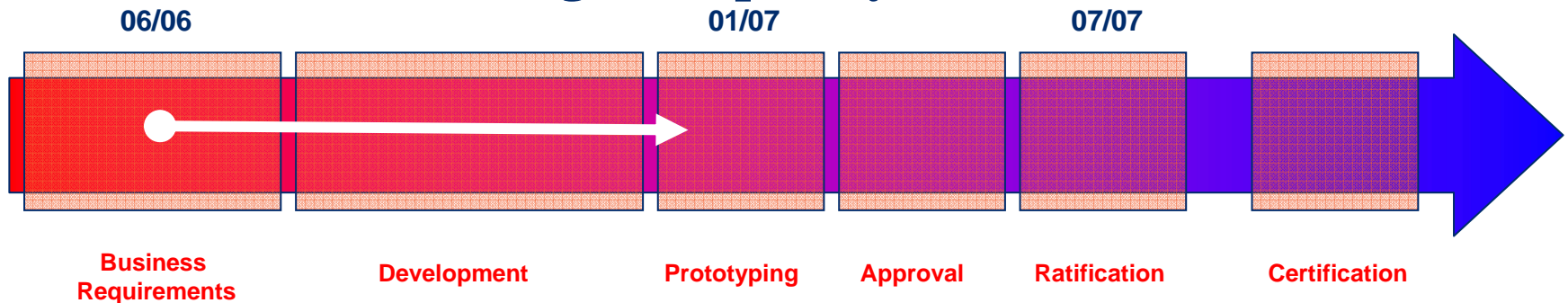
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HF Air Interface Group

- Consensus from all principle technology providers in the group on a unified proposal for item level specification in Nov 2006
- First draft specification is in progress and was reviewed at the Sydney HF Hardware Action Group in January 2007

High Frequency Ver 2





Tag, Label, Reader and Printer Performance Work Group

- Performance Reader Tag sub-group has begun collecting RF field strength measurements on-site at end user facilities to validate test methods
- General Metrics subj group is nearing completion of a working draft of the Tag Specification



Product Data Protection ad hoc Committee

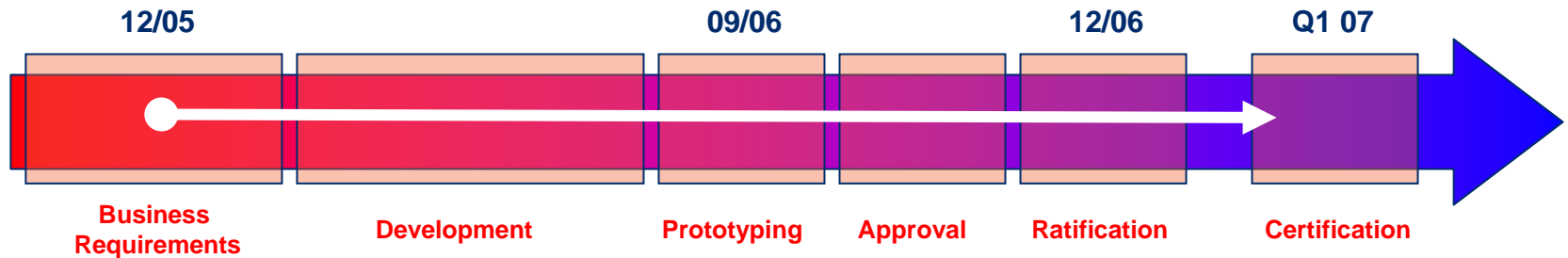
- Completed first draft of a threat analysis on RFID usage scenarios in November 2006
- Reviewed by Item Level Tagging Joint Requirements Group
- Compiling vertical specific input for threat analysis to complete the work



Drug Pedigree Standard

- Ratified by the EPCglobal board on January 5th, 2007
- Now available on EPCglobal website
- Next steps test procedures

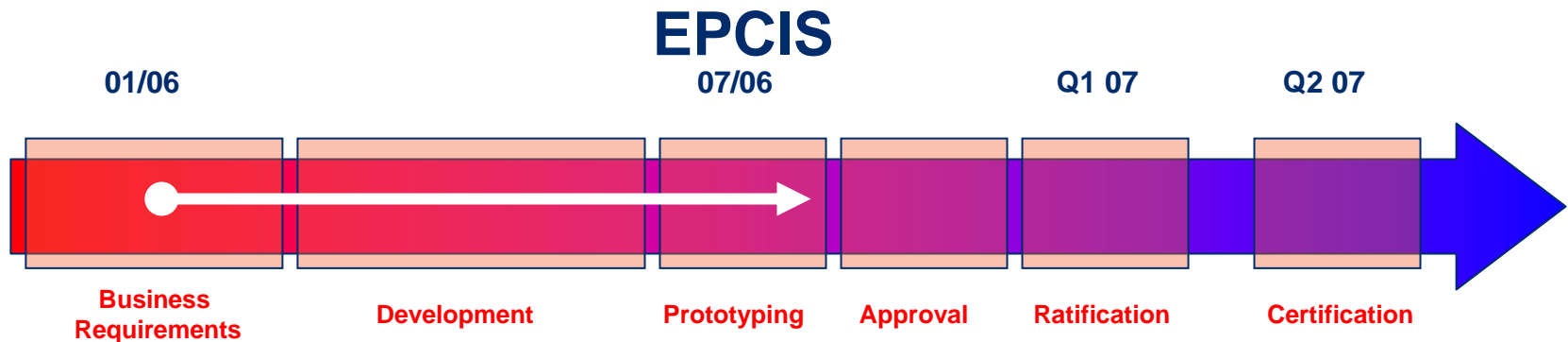
DPM (Electronic Pedigree)





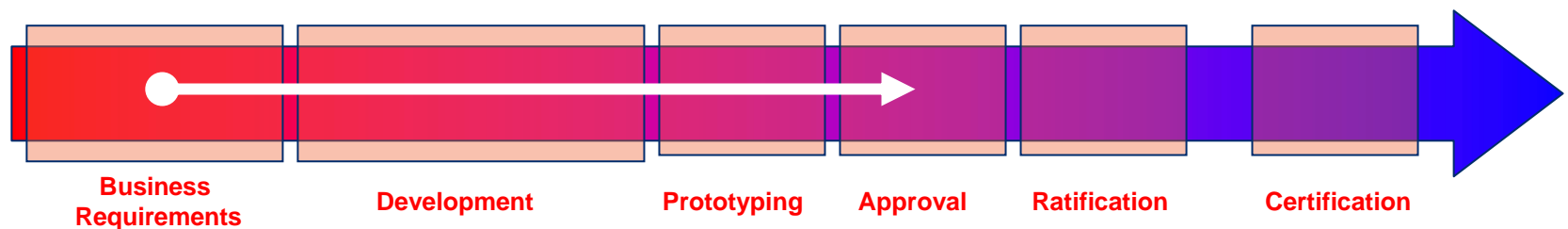
EPCIS

- What does the EPCIS provide?
- Proposed specification has now received approval from the Technical and Business Steering Committees
- Next steps
 - Obtain final IP review
 - Present to EPCglobal board for ratification



- Now a proposed specification and is now being sent to the technical and business steering committee's
- Reader Protocol Standard v1.1 was ratified in March 2006
- Currently addresses Class 1 Gen 2 protocol
- Gives technical user ability to fine tune the settings on the reader to optimise performance.

Reader Operation (Low level Reader Protocol)





Reader Operations Group

- Finalising draft of Discovery, Configuration and Initialisation specification (DCI)
- This specification defines an interface between RFID readers and the network infrastructure for the purpose of:
 - identifying how the reader obtains sufficient information to properly communicate to the network
 - Discovering one or more clients
 - Obtaining configuration information
 - Downloading firmware
 - Initialising operations to allow the Low Level Reader Protocol to operate
- Draft being validated by the Retail Supply Chain users but others are encouraged to participate as specification is finalised.



Helicopter view of EPCglobal Activities Implementation Cycle

Cross Industry Adoption and Implementation (AIG)

- Implementation Sharing
- European Adoption Program
- Asian Adoption Program



Cross Industry Adoption and Implementation Group

- No longer require an opt-in or signing of intellectual property (IP) agreements
- Implementation Sharing
 - Sharing key learning's presentations
 - Has now included other industry sectors
 - Two key initiatives are:
 - Review of starter kits
 - Collection of implementation issues to support sharing of experiences and solutions



Cross Industry Adoption and Implementation Group cont...

- European adoption program (EAP)
 - Task force for spectrum policy
 - Bridge Project
 - Last meeting was 8th of February in London
- Asian Adoption Program
 - 4th meeting was held on 5th December 2006 in Seoul over 50 delegates
 - Michael Tung of Baxglobal Schenker and HoJoon Chang of Kimberly Clark appointed as new co-chairs
 - Next meeting to be held on 14th and 15th of May in Malaysia
 - Business Case Sharing, Cook Book & EPC Value Proposition



Helicopter view of EPCglobal Activities

Public Policy Steering Committee (PPSC)

- European Working Group
- Healthcare and Life Science
- Electromagnetic fields best practices



Public Policy Steering Committee

- 1 December 2006, European working group held extensive exchange of views with European Commission officials in charge of co-ordinating current RFID debate in EU
- Information Society Chief will present to EU Commission Communication on RFID at CeBIT in Hanover in March
- Healthcare and Life Sciences work group has recently drafted industry guidance document available for EPCglobal subscribers interested in launching a pilot in the US
- Electromagnetic fields (EMF) Best Practices document has been developed by EPCglobal to provide RFID system installers and users with additional information on human exposure to electromagnetic fields.



EPCglobal Network – Reality Check

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Local Activities

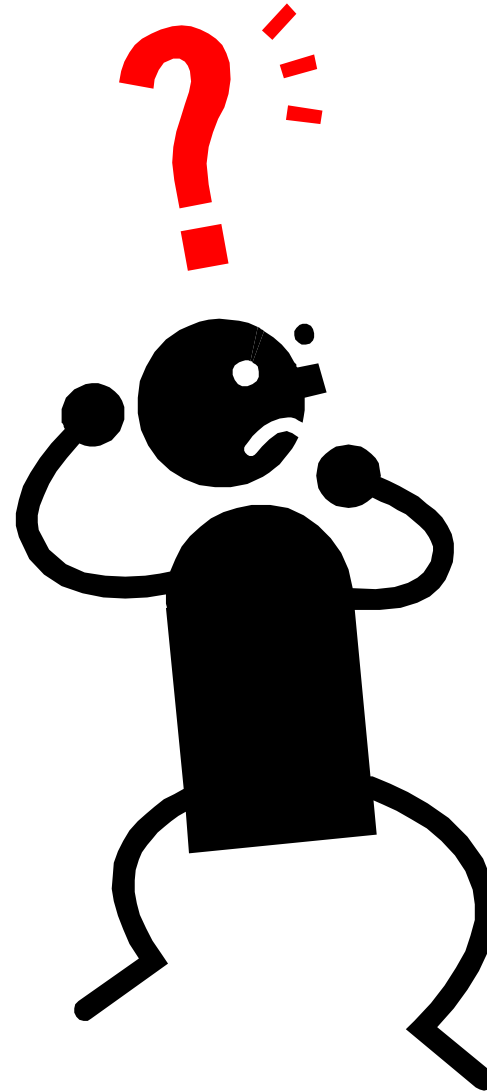
- 4 Watt
 - Laboratory testing completed prior and post Christmas
 - Report going through final drafting
 - Seeking clarification from ACMA on process moving forward
- Privacy Code of Practice
 - Rekindled group last year
 - First Public Review prior to Christmas
 - Second Public Review until end of February
 - Group agreed to completion date of end of this financial year
- Reviewing local EPCglobal Membership Process



The EPCglobal Standards At Work



Questions?





Thank you

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