



**GS1 EPC/RFID Advisory Group  
Meeting 5**

**GS1 Australia  
18<sup>th</sup> October, 2007**

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## **EPC/RFID Advisory Group**

- Introductions & apologies**
- Agenda / Actions from previous meeting**

**Mark Fuller**  
COO, GS1 Australia

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## Agenda

|                |   |  |
|----------------|---|--|
| 9:30am         | Welcome<br>Introductions & apologies<br>Previous mtg actions  | Mark Fuller, COO GS1 Australia   |
| 10:00          | Combined Workgroups   | Richard Jones, GS1   |
| <b>10:45</b>   | <b>Tea break</b> (Technical Group Arrive)   |  |
| <b>11:10</b>   | <b><i>EPCIS Overview</i></b>  | <b><i>Alf Grasso, GS1</i></b>  |
| 11:55          | NZ Fresh Produce<br>Music & Entertainment Project<br>Taiwan/Australia RFID project<br>4 Watt License update | Peacock Bros & Intermec<br>Sean Sloan, GS1<br>Geoffrey Ramadan, ADCA<br>Sue Schmid |
| 12:40pm        | Next steps, review of format<br>and timings. Wrap up.   | Mark Fuller  |
| <b>12:55pm</b> | <b>Lunch</b>  |  |
| 1:40           | Alliance Partner Update   | Joseli Munive  |
| 2:00pm         | Close   |  |

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## Previous Meeting Minutes / Actions

- **Mtg #4: 59 attendee's at Woolworths HO on 23 August 2007**
- **Agreed no business case yet in FMCG on items**
- **Likely pilots and roadmap in M&E or TCF**
- **Drivers could include traceability, EU mandates, cross-border security, asset tracking**
- **ROI Tool to be distributed to Best Practice group**  
Completed
- **All BP members to assess ROI tool in context of their own business**  
Address in Workgroup
- **Progressing ACMA 4 Watt License trials**

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## The GS1 Vision for EPC/RFID



**EPCglobal leads the development of industry driven standards for the Electronic Product Code (EPC) to support the use of RFID in today's fast moving information rich, trading networks.**

**Our Goal is to increase the visibility and efficiency throughout the supply chain and ensure high quality information flow between companies and their trading partners**



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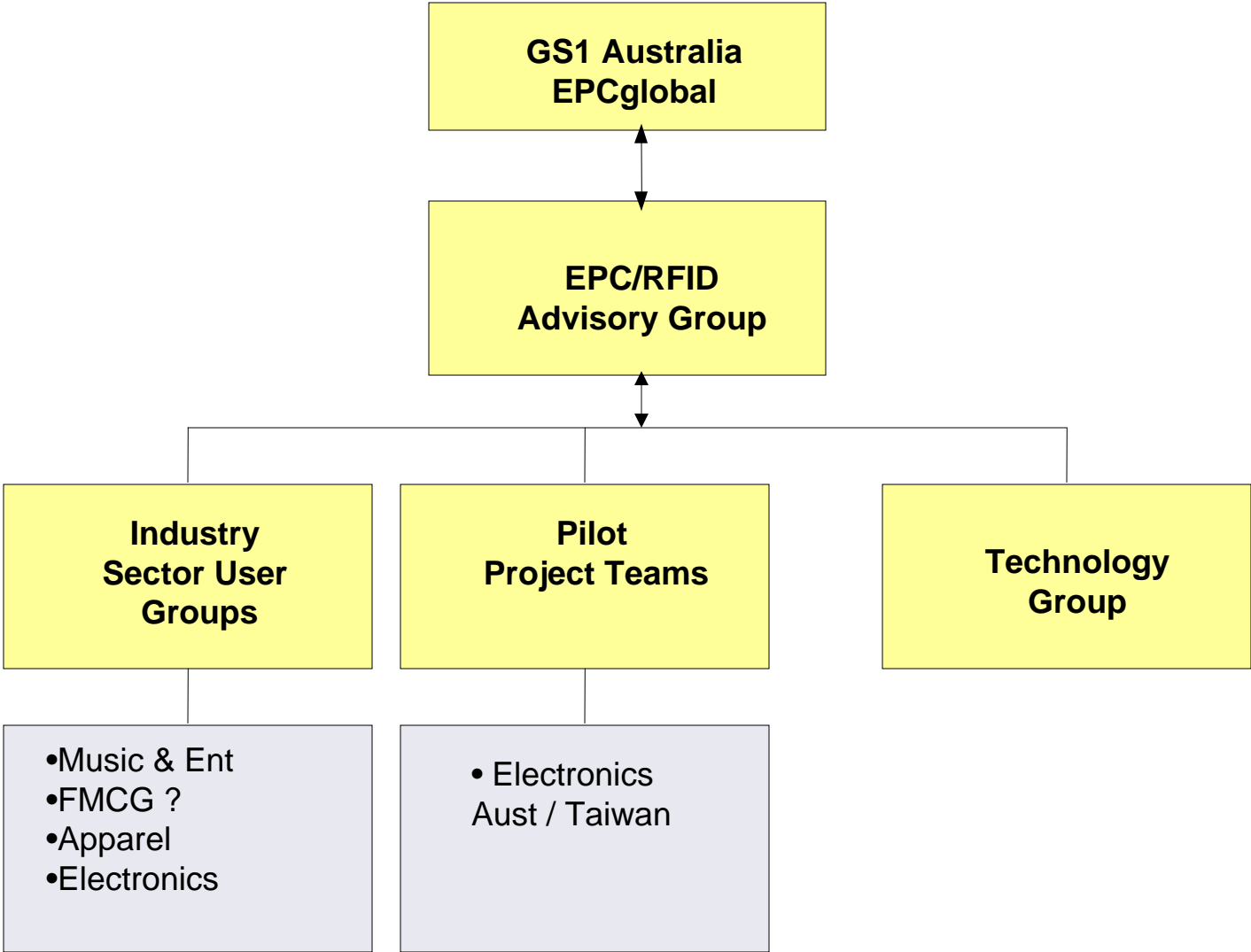
## Advisory Group Role - Revisited

- **Setting the direction for Australian industry**
- **Leveraging overseas experience**
- **Learning through pilot implementation**
- **Lobby Government and Associations**
- **Networking and information sharing**
- **Training and education on use of EPC technology**
- **Public policy eg 'privacy code of practice'**
- **Participation in standards development**





# EPCglobal Local Groups



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## Workgroup Session

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## Business Tools / Best Practice Workgroup

- Evaluate and extend tools
- Work Group activities:
  - Training on tools
  - Analyse inputs for local marketplace and amend appropriately
  - Analyse calculations and amend appropriately
  - Analyse results for local marketplace and amend appropriately
- Best practice evaluation and pilot tools
- Implementation and availability of localised tool set





## Business Tools / Best Practice Workgroup Meeting 5 Agenda

- List all tools available (GS1 & external)
  - EPCglobal cookbook
  - ROI Calculator
  - Peleton
- Introduction to EPCglobal North America ROI tool
- Feedback around the use of this ROI tool in its current format
- Next steps





## Workgroup 1 – Best Practice & Tools

| Combined Work Group 1 :<br>Empirical Best Practice & Localise Tools |                      |                    |                     |
|---|----------------------|--------------------|---------------------|
| Company   | Representative       | Status             | Attending<br>AG4 WG |
| GS1   | Sue Schmid           | Confirmed          | Y                   |
| GS1   | Alf Grasso           | Confirmed          | N                   |
| GS1   | Praveen Kannan       | Confirmed          | N                   |
| <b>Visy</b>   | <b>Andrew Stuart</b> | <b>Team Leader</b> | <b>Y</b>            |
| AMCOR   | Walter Gross         | Confirmed          | N                   |
| Australia Post  | Nick Rentos          | Confirmed          | N                   |
| Chep  | Murray Fane          | Confirmed          | Y                   |
| Chep  | Gerry Wind           | Confirmed          | Y                   |
| Chep  | Douglas Johnston     |                    | New                 |
| Intel Australia   | Colin McCabe         |                    | New                 |
| Levi Strauss  | Paul Edwards         | Confirmed          | Y                   |
| Metcash   | Michael Haire        | Confirmed          | N                   |
| P&G   | Ian Isherwood        | Confirmed          | Y                   |
| RFIDAA  | Ian Watt             |                    | Y                   |
| RMIT  | John Mo              | Confirmed          | Y                   |
| Uni of Western Sydney   | Stephen Waters       |                    | New                 |
| WW  | Julie Coates         |                    | New                 |
| WW  | Andre Garabedian     |                    | New                 |
| WW  | Sue Litt             | Confirmed          | Y                   |
| WW  | Justin Nolan         |                    | New                 |
| WW  | Peter Roebers        |                    | New                 |
| WW  | Tom Whelan           |                    | New                 |

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## Industry Roadmap & Pilot Workgroup

- Identify sectors ready to develop an RFID roadmap
- Identify and scope national pilot (s)
- Develop a strategy to manage and fund pilots
- Leverage international EPCglobal community experience
- Address privacy Issues: Code of Practice





## Industry Engagement / Roadmap Workgroup Meeting 5 Agenda

- Scope potential national pilots involving ACS:
  - Consumer electronics / Meat / Dairy
- Other potential pilots
  - M&E sector initiative
  - FMCG sector: asset tracking pilot, promotions?
- ePOD: How do we leverage successful National Demonstrator Extension project?
- Identify and track Global Industry Action Group involvement
- Next steps





## Workgroup 2 – Industry Engagement / Roadmap

| Combined Work Group 2 :<br>Industry Roadmap, National Pilot Program & Lobby Government |                   |             |                     |                            |                      |            |                     |
|--|-------------------|-------------|---------------------|----------------------------|----------------------|------------|---------------------|
| Company  | Representative    | Status      | Attending<br>AG4 WG | Company                    | Representative       | Status     | Attending<br>AG4 WG |
| GS1  | Richard Jones     | Team leader | Y                   | Pacific Brands             | John McDermott       | Confirmed  | Y                   |
| GS1  | Mark Fuller       | Confirmed   | Y                   | Panasonic                  | Peter Nimmo          |            | New                 |
| GS1  | Peter Chambers    | Confirmed   | Y                   | Pfizer Consumer Healthcare | Andrea Squire        |            | New                 |
| GS1  | John Hearn        | Confirmed   | N                   | Proctor & Gamble           | Nicholoas Kambounias |            | New                 |
| AEEMA  | Angus Robinson    | Confirmed   | N                   | RMIT                       | John Mo              | Group 1    | Y                   |
| AFGC   | Russ Neale        | Confirmed   | Y                   | RMIT                       | Milan Simic          |            | N                   |
| AirRoad Express  | Phil Newman       | Confirmed   | N                   | Roadshow Entertainment     | Leanne Emerson       |            | New                 |
| Amcor  | Martyn Johnson    | tbc         | N                   | Sony Australia             | Peter Newham         |            | New                 |
| AMCOR  | Walter Gross      | Confirmed   | N                   | Sony Australia             | Paula Grundy         |            | New                 |
| Australia Post   | Nick Rentos       | Confirmed   | N                   | Super Cheap                | Jim Tarlinton        | Confirmed  | Y                   |
| Australian Customs   | Julian Warner     | Confirmed   | Y                   | Technicolor                | Brian McCann         |            | New                 |
| Australian Customs   | Bryce Conolan     |             | N                   | Toll                       | Damian Bishop        | Interested | N                   |
| Brambles/Chep  | Gerry Wind        | Group 1     | Y                   | Universal Music            | Kate Bradbury        |            | New                 |
| Brambles/Chep  | Murray Fane       | Group 1     | N                   | Versacold Logistics        | Ken Brundell         |            | New                 |
| Brazin   | Greg Milne        |             | New                 | Versacold Logistics        | Paul Rovella         |            | New                 |
| Coles Limited  | John Bacon        | Confirmed   | Y                   | Visy                       | Andrew Stuart        | Group 1    | Y                   |
| Colgate Palmolive  | Tina Stoian       | tbc         | N                   | Waner Music                | Michele Blunden      |            | New                 |
| Dairy Farmers  | Tony Dobson       | tbc         | c                   | WW                         | Dan Beecham          |            | New                 |
| Fox Studios  | Chris de Graaf    |             | New                 | WW                         | George Geha          |            | New                 |
| Kimberley-Clark  | Mario Carniato    | Confirmed   | N                   | WW                         | Paul Heppell         |            | New                 |
| Masterfoods  | Fergus Wilson     | Confirmed   | N                   | WW                         | Alan Hicks           |            | New                 |
| Metcash  | Michael Haire     | Confirmed   | N                   | WW                         | Daniel Kochanowicz   |            | N                   |
| MLA  | Rebecca Underwood | Confirmed   | Y                   | WW                         | Stuart Larkin        |            | New                 |
| Nestle   | Keith Crews       | tbc         | N                   |                            |                      |            |                     |

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**Workgroup Sessions**

**General Discussion**

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**TEA BREAK**

**Joined by Technology Group**

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# EPCIS Overview

**Alf Grasso**

GS1 Australia

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# Electronic Product Code Information Services (EPCIS)

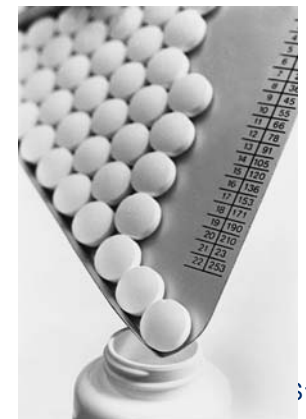
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## Anti-Counterfeit / Brand Protection

- Was my product sold and distributed via the expected channels?
- Have counterfeit products entered the supply chain?
- Has the product been authenticated?



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## Chain of Custody

- Where did my product come from?
- Can the chain of custody be trusted?
- Where is my product located now?
- Was the shipment received securely as it moved across the ocean?



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## Inventory Visibility

- Have the displays reached the needed intermediate locations yet for next month's promotion?
- Where are the units in the lot that need to be recalled NOW?
- Where are the items with an expiration date of today?





## Maintenance Records / Warranties

- How long ago was this part on this machine/aircraft maintained?
- Who performed and where were the last 3 repairs?
- When is this component due to be inspected?





## What is EPCIS?

- The **EPCIS (Electronic Product Code Information Services) Standard** was developed to define *interfaces* that enable sharing of data between trading partners.
- Solution providers like IBM, Oracle, SAP and others have created EPCIS data repositories for data related to EPC tagged items and information about what happens to them as they move through a supply chain and/or their lifecycle
- EPCIS is standard-based approach to securely share information that will provide visibility and improve businesses processes in an unprecedented manner.





## What is EPCIS? (2)

- Industry and Application Neutral
  - Can be used across industries
  - Doesn't matter how data is collected
- Secure information exchange
  - Everyone controls their data and shares it only with those they choose to share it with
  - Leverages established security mechanisms
- A supplement to, not a replacement for, existing enterprise information systems
  - Complementary to EDI and B2B standards





## What is the status of EPCIS?

- Current applications across industries
  - **Retail Supply Chain (RSC)** for Promotional Visibility and Electronic Proof of Delivery – Phase I and Phase II pilots underway or completed
  - **Healthcare Life Sciences (HLS)** for Product Authentication/Pedigree
  - **Transport and Logistics (TLS)** moving product through multiple points in the supply chain and through customs clearance
  - **Consumer Electronics**
  - **Media and Entertainment**
- Certification for EPCIS available
  - [http://www.epcglobalinc.org/certification/sw\\_cert/EPCglobal\\_Certified\\_EP\\_CIS\\_Software\\_Products\\_10.02.07.pdf](http://www.epcglobalinc.org/certification/sw_cert/EPCglobal_Certified_EP_CIS_Software_Products_10.02.07.pdf) (2nd Oct 2007)
- Open source testing ground available from Auto ID Labs
  - <http://www.accada.org>





## What is EPCIS Data?

EPC Events answer 4 questions – **What, Where, When, and Why**

|              |   |
|--------------|---|
| <b>What</b>  | <ul style="list-style-type: none"><li>• EPC number to identify product or item (SGTIN)</li><li>• Manufacturing Data (lot, batch, expiration date)</li><li>• Transactional Data (PO, Shipment, Invoice)</li></ul>  |
| <b>Where</b> | <ul style="list-style-type: none"><li>• Location (can be fixed or moving – leverage master data - GLN)</li></ul>  |
| <b>When</b>  | <ul style="list-style-type: none"><li>• Event Time</li><li>• Record Time</li></ul>  |
| <b>Why</b>   | <ul style="list-style-type: none"><li>• Business Process Step – e.g.: Receiving, Shipping</li><li>• Product State – e.g.: Saleable, Active, In Transit</li><li>• Current Conditions – e.g.: Temperature</li></ul> |





## EPCIS Data Exchange

- When an EPC moves through a supply chain EPC Event Data is created and includes:
  - EPC or Product Identifier
  - Time
  - Read Points
  - Business Locations
  - Business Steps
  - Disposition
  - Business Transaction Type





## EPCIS can work with any data carrier

- An EPC Product Identifier can be captured via:
  - Passive RFID Tag – UHF Gen 2, HF
  - Barcodes – Linear, Data Matrix
  - Active RFID Tag
  - Human Readable Number





## Read Points

- **Read Points** are the very specific place that an RFID read took place or where a “read” was captured. Sometimes this may be very similar to a Business Location.

*A Read Point answers the question:*

*“Where was the Object seen?”*

*Example – A read point could be passing through the door from receiving area*





## Business Location

- **Business Locations** are the logical places a **product** is assumed to be following an RFID read event and before a new event takes place.

*A Business Location answers the question:*

*“Where is the Object assumed to be following the read event?”*

*Example would be after the tag passed through the door of the receiving area it is located in the stocking room of the receiving area*





## Business Step

- **Business Step** - specifies the business context of an event: What business process step was taking place that caused the event to be captured?

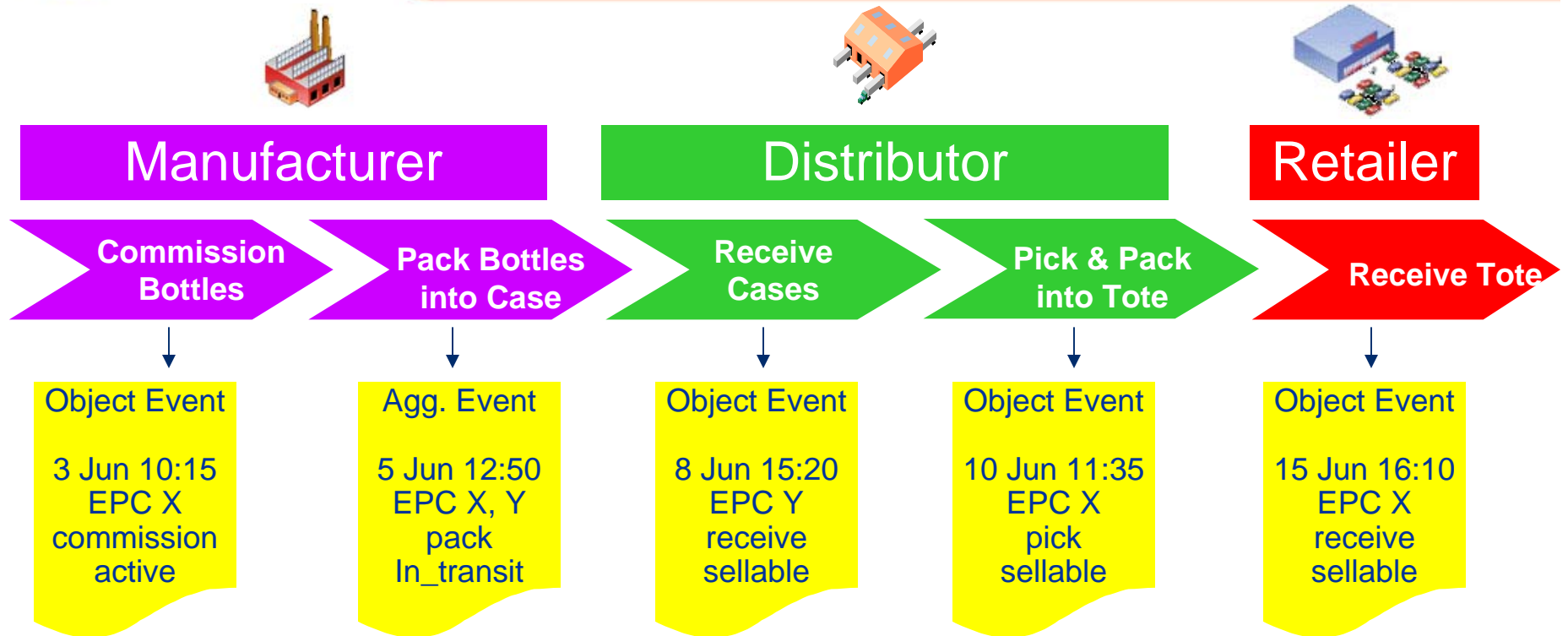
*A Business Step answers the questions of “What business process is being executed at this read point?”*

*Example would be “Receiving”.*





# Putting it Together



Mfr: Are promotional goods reaching retailer in time?

- Measure time between mfr ship event and retailer receive event

Retailer: Are received products authentic?

- Query other events to ensure sighting by legitimate mfr and distributor

Distributor: Were shipped goods received? (proof of delivery)

- Query retailer to find sightings

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# TOP 10 EPCIS Frequently Asked Questions

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## F A Q – Question 1

### **Q: Why should my company use EPCIS standards?**

**A:** If your business involves handling physical goods – for example, if your organisation is a manufacturer, distributor, logistics provider, reseller or large end user of tangible goods – then you probably already consume information internally or exchange information externally about the location and status of material. The EPCIS standard provides a path for cost-effectively sharing visibility information with a much finer granularity of detail.





## F A Q – Question 2

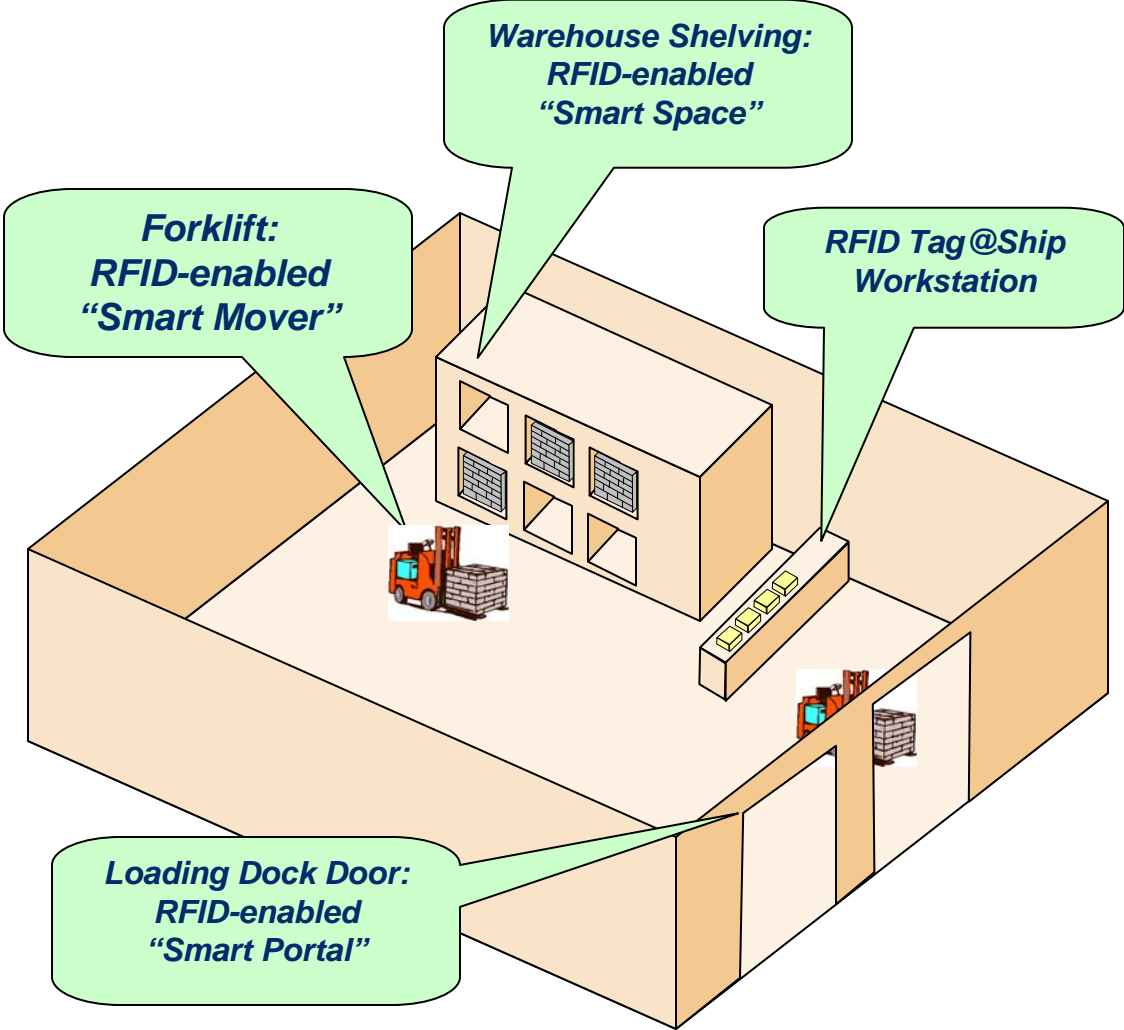
**Q: Why should I use the EPCIS standard if I do not wish to share data with other trading partners?**

**A:** EPCIS is the bridge between the physical world and information systems. Many businesses have completely internal business processes that involve the handling of goods, and EPCIS provides a standard way of managing visibility into those processes. The benefits of giving business applications visibility into the physical world are as compelling within the four walls as they are between trading partners.





# Capture Operations in a Warehouse

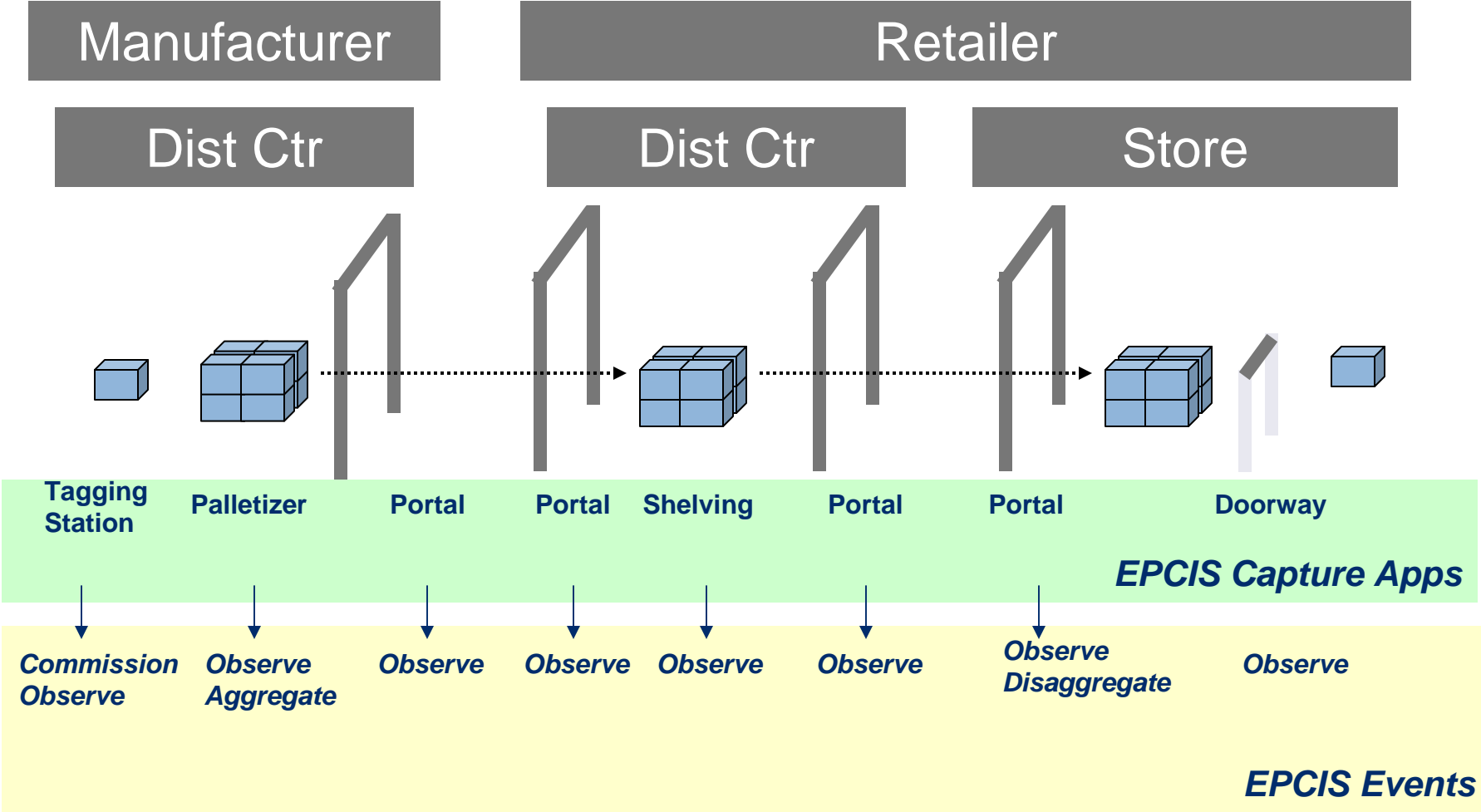


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# EPCIS Capture Apps



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## F A Q – Question 3

**Q: Does the EPCIS standard replace EDI standards?**

**A:** No. The EPCIS standard provides a way to share high volume, very fine grain visibility information about material movement and status among cooperating partners. EPCIS does not address purchasing, forecasts, bidding, billing, etc. that are typically exchanged via EDI in a business transaction between two parties.





## F A Q – Question 4

**Q. Is EPCIS a large scale enterprise application designed by a committee?**

**A: EPCIS is not an application.** EPCIS is a *standard* that defines *interfaces* for representation and exchange of data. The EPCIS interface standards support applications, by specifying a data and communication format. The EPCIS standard provides a necessary starting point for sharing of data, but does not provide application level functionality.





## F A Q – Question 5

**Q: Does EPCIS have a sufficient level of functionality for an enterprise application?**

**A: EPCIS is not an application.** The EPCIS *standard* is a set of *interfaces* that support sharing of visibility data. This is similar to email protocols supporting the distribution of Internet mail. EPCIS defines a capture interface and a query interface to obtain and share business event information. The standard may be implemented by applications, but the applications themselves are developed by end users and solution providers – not EPCglobal. Those applications are expected to be quite diverse in their actual implementation.



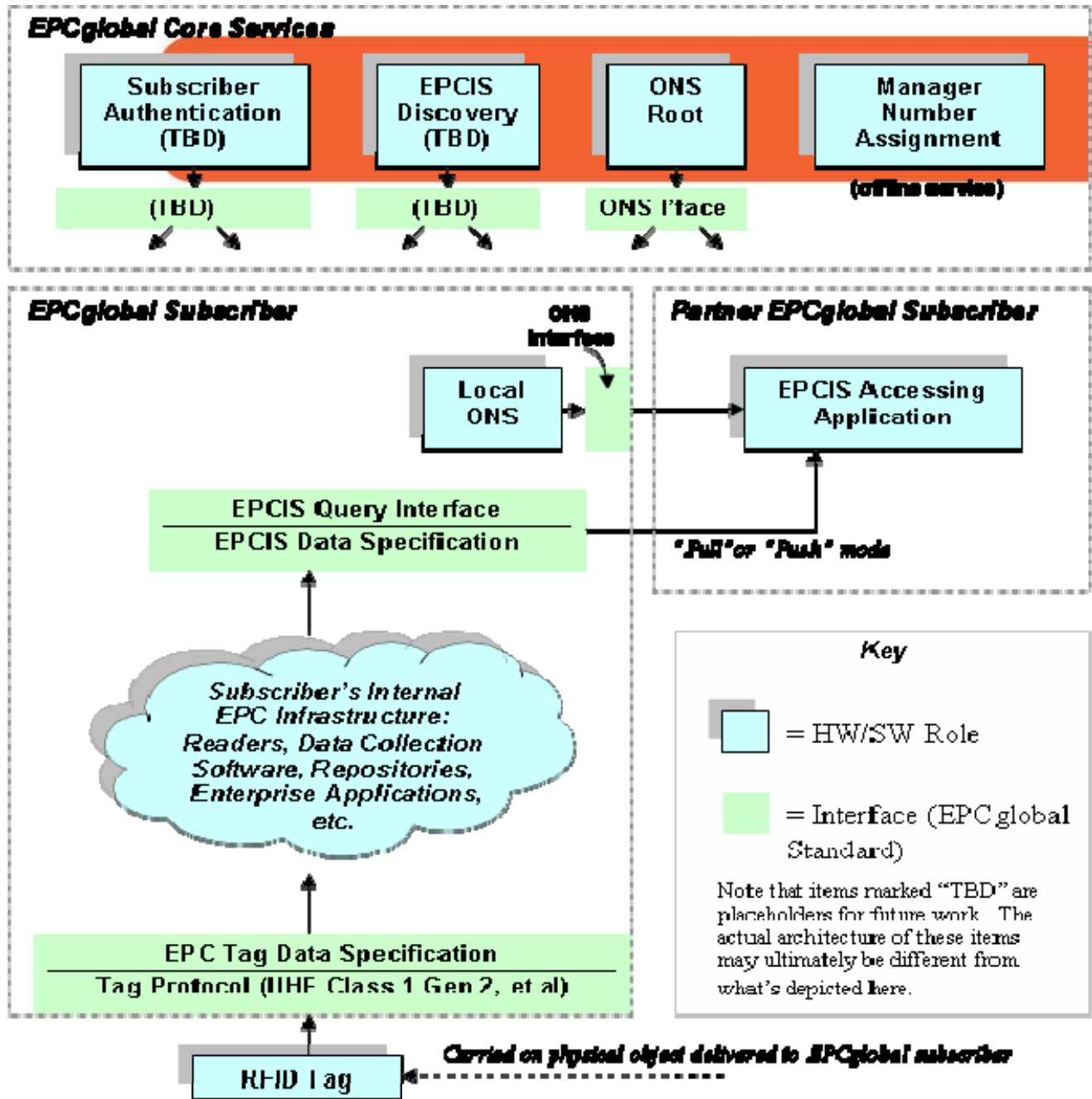


## F A Q – Question 6

### **Q. Is EPCIS the same thing as ONS?**

- A. No. Object Naming Service (ONS) can be thought of as a lookup service that takes an EPC as input, and produces as output the address (in the form of a Uniform Resource Locator, or URL) of an EPCIS repository designated and implemented by the EPC Manager of the EPC in question. EPCIS, on the other hand, provides the means to communicate further information about an individual EPC.





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## F A Q – Question 7

### **Q. Is ONS required to deploy EPCIS?**

**A:** EPCIS can be deployed today without need for ONS or other discovery mechanism. ONS or other discovery mechanisms become necessary when you do not know where to go to get information about a particular EPC.





## F A Q – Question 8

### **Q. Is there a master, centralised EPCIS?**

**A:** There is no central implementation of EPCIS. EPCIS is not an application. No single organisation or small set of organisations holds the data generated everywhere. EPC information is collected and owned by the organisation collecting the data, in whatever manner they choose





## F A Q – Question 9

### Q. Can EPCIS scale?

A. Yes. The standard is defined as a common way to express occurrences in the physical world. Because the EPCIS standard only defines interfaces, not implementations, the specification itself does not constrain implementations in any way that would affect scalability.





## F A Q – Question 10

### Q. How is EPCIS data secured?

A: There are two forms of data security described in the EPCIS specification – authentication and authorisation.

- **Authentication** – the EPCIS standard enables the use of multiple message transport bindings that include authentication – including SOAP over HTTP with TLS (web services) and XML over AS2. The implementation of the bindings are defined outside the EPCIS standard.





## F A Q – Question 10...cont.

- **Authorisation** – an implementation of the EPCIS Query Interface may use the authenticated identity of the requester, together with arbitrary business rules, to decide which events to deliver to the requestor and which information to include within those events. The EPCIS specification itself does not specify what those business rules are – it is up to each implementation to use authorization rules that are appropriate given its own business situation.





## Conclusions

- EPC Information Services
  - Capture and Query of business events
    - What, Where, When & Why
  - Allows secure sharing of data between multiple trading partners, across different industries, on different application databases
  - Supplement to ERP systems
  - Works with any data carrier
    - RFID - EPC and others, Barcodes, Human Readable Numbers
- Availability
  - Certified Implementations
  - Open Source Implementations





**Thank you**

**Questions**

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# NZ Fresh Produce, EPCGlobal Pilot & Intelligent Forklift

Peacock Bros & Intermec

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## Music & Entertainment Project

**Sean Sloan**  
GS1 Australia

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# Taiwan/Australia RFID Project

**Geoffrey Ramadan**  
ADCA

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## 4-Watt ACMA License Update

**Sue Schmid**  
GS1 Australia

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## Next Steps & Wrap Up

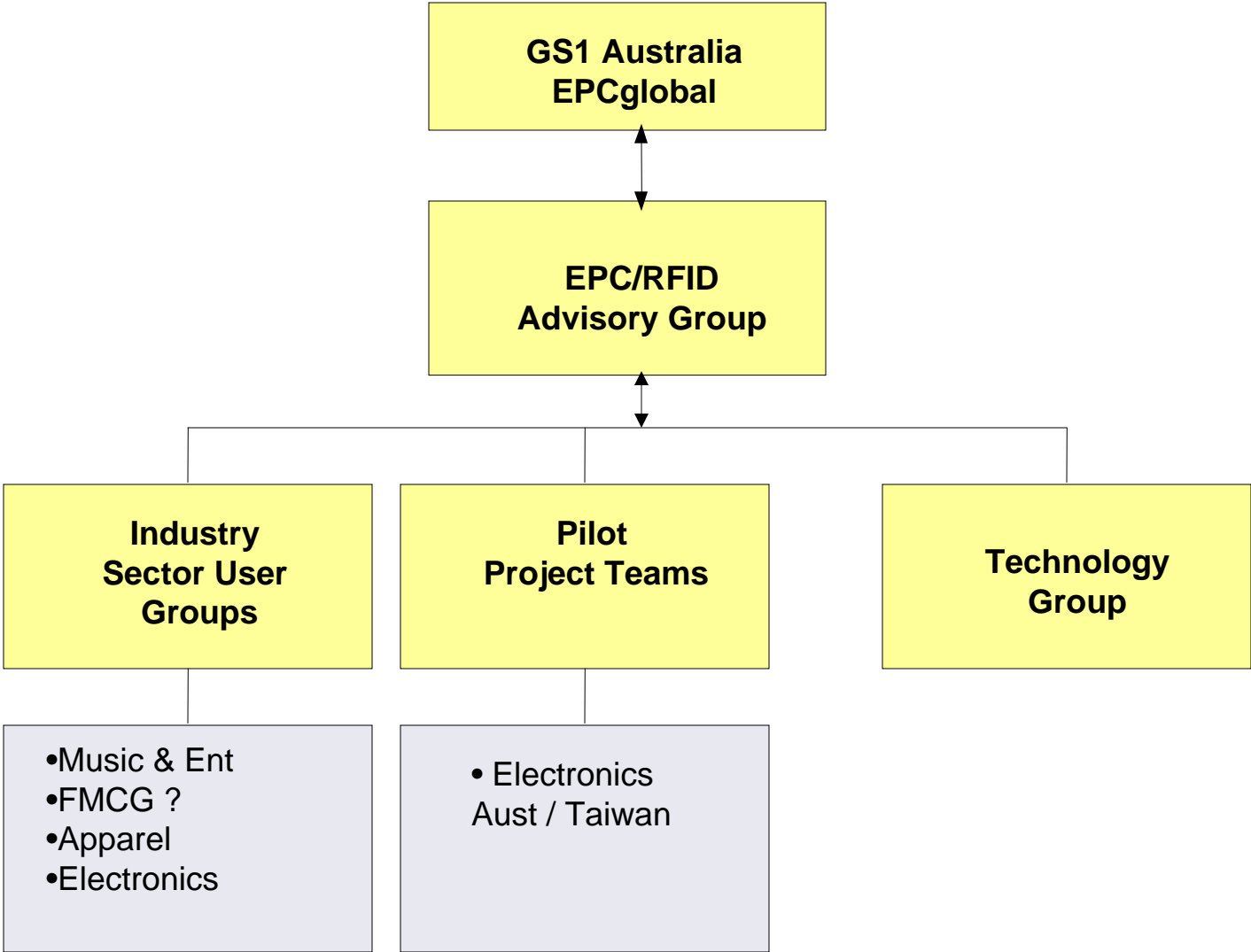
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# EPCglobal Local Groups



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## Proposed Meeting Dates - 2007

- Thursday 6 December 2007: Sydney @ Telstra (Xmas Drinks)
- Thursday 6 March 2008: Melbourne @ TBC
- Thursday 6 June 2008: Sydney @ TBC
- Thursday 4 September 2008: Melbourne @ TBC
- Thursday 4 December 2008: Sydney @ TBC





**LUNCH**

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## **Solution Partner Updates**

**Joseli Munive,**  
Manager Alliances & Partnerships

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# Meeting Close

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