An Overview of EPCglobal's Action and Working Groups

EPCglobal Action Groups are designed to bring together global users from a variety of industries to define business and technical requirements for the EPCglobal Network™. Participation is a benefit of subscription and is open to Subscribers from any EPCglobal Member Organization (MO). The business and technical Action Groups help to develop the foundational building blocks of the EPCglobal Network, working toward the creation of global, cross-industry standards and commercial adoption.

Subscribing companies to EPCglobal US are encouraged to provide company representatives to participate in these groups. The following is a list of Action Groups that have been established:

- **Business Action Groups (BAGs)** are comprised of representatives from companies that currently use or plan to utilize EPCglobal Network technology. These groups aim to establish business requirements and use cases across multiple industries to facilitate supply chain efficiency. There are currently two Business Action Groups: Fast Moving Consumer Goods and Healthcare & Life Sciences.
- **Hardware Action Group (HAG)** defines the interfaces between hardware components (primarily RFID tags and readers) in the EPCglobal Network.
- **Software Action Group (SAG)** defines software interface and other standards both within the EPCglobal Network elements and between these and other elements of enterprise systems distributed over a number of enterprises and geographies.

On the pages that follow, you will find a detailed listing if EPCglobal Action and Working Groups along with complete descriptions of their role in the EPCglobal Standards Development Process. Companies with a desire to participate in any Action Group or Working Groups are required to sign the EPCglobal Intellectual Property (IP) Policy (www.EPCglobalinc.org) and forward it to their local EPCglobal MO. For more information on how to participate in an Action or Working Group, contact EPCglobal's Community Manager via email at KRhoades@EPCglobaluUS.org.

Hardware Action Group (HAG)

The mission of the Hardware Action Group (HAG) is to define the interfaces between hardware components (primarily EPC tags and readers) in the EPCglobal Network. Physical meetings of the Hardware Action Group (HAG) are held bi-annually. Conference calls are held on a weekly basis or as needed by each Working Group.

HAG Working Groups

UHF Generation 2 Protocol Maintenance

- This Working Group manages any enhancement requests against the UHF Gen 2 Standard and will produce a businessperson's brief on the features of the Gen 2 Standard.

Testing and Certification Working Group

- The purpose of this Working Group is to work with MET Laboratories to review and confirm the certification test plans for the UHF Gen 2 Protocol.

UHF Class 2

- This Working Group will begin with a Joint Requirements gathering task to assess the need for additional Class 2 EPC tag features in the UHF Gen 2 Protocol. Additional Class 2 features may include encryption, read locking, recycle features, sensor support and structured user memory,

Item Level Tagging Joint Requirements Group

- This group is tasked with gathering requirements collaboratively with both Business Action Groups in support of future item level tagging.
- The resulting requirements may call for the formation of Working Groups to address any or all of the reported requirements.

Software Action Group (SAG)

The mission of the Software Action Group (SAG) is to develop definitions for software interface and other standards, both within EPCglobal Network components and between these and other elements of enterprise systems distributed over a number of enterprises and geographies. Physical meetings of the SAG are held bi-annually. Conference calls are held weekly or as needed by each Working Group.

SAG Working Groups

EPC Information Services (EPCIS) Phase 2

- Create one or more normative technical specifications that will facilitate the development of interoperable EPCIS systems. The scope of these specifications is limited by the following constraints and guidelines:
    - EPCIS version 1.0 will address Data Capture and Data Query
    - Access Control and Authentication will be addressed
    - All specifications will seek to adopt the layered approach already adopted by the Reader Protocol, Reader Management and Filtering & Collection Working Groups and to cleanly separate the specification of data from operations upon data
    - The only binding of the abstract service descriptions provided in this version of specifications will be a binding to a web services framework, using WSDL and XSD

Filtering and Collection

- Create a specification for a software application programming interface (API), associated data specifications, and reporting mechanisms, through which clients may obtain filtered, aggregated tag read data from a multiplicity of tag read sources.

ONS

- Complete outstanding work concerning the Object Name Service, which includes bringing the "Object Name Service 1.0" document to the Standard Specification level within the EPCglobal Standards Development Process.
- In addition to the base protocol specification, the group will also specify an application programming interface (API) for issuing ONS queries and an operational guidelines document that outlines industry best practices for the operation of DNS infrastructure.

Reader Protocol

- Define the 1.0 protocol specification for exchanging data and commands between hosts and readers, supporting functions such as reading tags, writing to tags, and killing tags.

Reader Management

- Define a set of standard functions that enable configuration, provisioning, monitoring, and alarm notification of individual RFID readers leveraging the standard communication protocol defined by the Reader Protocol Working Group where applicable. This set of standard functions will provide a baseline for management operations, will be extensible for future revisions, and will provide the ability to accommodate vendor specific extensions.

Security

- Deliver a set of recommendations to provide a security framework to ensure different levels (i.e. 'low, 'medium', 'high') of consumer information privacy, data authentication, integrity for both wireless and wired data transmissions, and mutual business confidence for collaborative business trading networks.

Tag Data Translation

- Develop the necessary specifications to express the current Tag Data Standards encoding and decoding rules in an unambiguous machine-readable format, which will allow any component in the EPCglobal Network technology stack to automatically convert between the binary and tag-encoding and pure-identity URI formats of the EPC as appropriate. The motivation is to allow components flexibility in how they receive or transmit EPCs, to reduce potential 'impedance mismatches' at interfaces in the EPCglobal Network technology stack. Reference implementations of software that demonstrate these capabilities will also be developed.

Tag Data Standards

- Identify and document the required correction and enhancement to the current EPCglobal Tag Data Standard specification.
- Provide methodology as guidance to the current Tag Data Standard specification for proprietary coding, alphanumeric coding, etc.
- Identify the requirements of future tag data standard scheme including synchronization and/or Incorporation of ISO data standard, potential new industries, Class 2 and beyond.

Fast Moving Consumer Goods Business Action Group (FMCG BAG)

The mission of the Fast Moving Consumer Goods Business Action Group (FMCG BAG) is to identify end-user business requirements to the EPCglobal standards development process and promote the adoption and implementation of the Electronic Product Code™ (EPC) and the elements of the EPCglobal Network. The FMCG BAG will accomplish its mission through the following actions:

- Chartering Work Groups to explore application areas and initiate, refine and complete Use Cases for forwarding to the technical Action Groups.
- Ratifying the technical specifications of the technical Action Groups as meeting the user Business Action Group requirements.
- Providing a forum for the interaction of End-Users and Solution Providers to collaborate on the definition of user requirements and the understanding of solutions to those requirements.
- Providing a forum to share learnings from pilots and implementations.
- Acting as the primary representative body of users of the EPCglobal Network and coordinating the activities of the BAG with those of other groups that may contribute to the work of driving adoption.
- Representing a global scope of interest in the EPCglobal Network by users and ensuring that geographic opportunities and challenges are recognized. It is the intention of the FMCG BAG to recognize global scope through Use Cases rather than through the chartering of separate user groups on different continents or in different countries.

Physical meetings of the FMCG BAG are held on a quarterly basis. Conference calls are held on a weekly basis or as needed by each Working Group.

FMCG BAG Working Groups

Asian Adoption Program (AAP)

- Help Asian businesses to extract maximum business benefit from the use of EPCglobal technology as quickly as possible with minimum problems and without duplicating the work of other EPCglobal or GS1 work groups.
- Obtain agreement on standards adoption by EPCglobal Subscribers in the region and publicize common expectations of how EPCglobal technology will be implemented in Asia in order to avoid conflicting approaches.
- Ensure that Asian views related to EPCglobal and user requirements in the region are clearly represented to EPCglobal and other standards and policy groups.
- Enable AAP members to exchange information to assist in the practical implementation and justification of RFID and EPCglobal technology within Asia.
- Communicate with relevant organizations including industry and consumer groups, government and other regulatory authorities.
- Attract adoption of EPCglobal Standards from key entities in the region.

Data Exchange

- Establish business requirements for the use and exchange of EPC-related data between trading partners
- Determine and communicate the scope and standardized business processes of EPC data exchange

European Adoption Programme (EAP)

- Enabling EAP members to exchange information to assist in the practical implementation and justification of Radio Frequency Identification (RFID) and EPC technology within Europe.
- Agreeing on common expectations of how EPC technology will be rolled out in Europe in order to avoid incompatible approaches.
- Publicize a common approach to roll out EPC technology in Europe in order to speed adoption and the associated benefits.
- Reflect back to EPCglobal and GS1 technical groups any issues with standards arising from implementations in Europe.
- Lobby and communicate with relevant organisations including industry and consumer groups, government and other regulatory authorities.

Pilot and Implementation

- Provide end-user companies with practical and timely information needed as they prepare for EPC/RFID pilot and implementation projects.

Reusable Transport Items (RTI)

- Establish data standards for the tagging of reusable assets across the supply chain.
- Propose data exchange flows underpinning the efficient and safe management of RTIs.
- Recommend ways of linking the management of RTIs to the need for product/ingredients tracking.
- Provide clear links with existing product tracking requirements associated with the movements of assets.

Strategic Planning

- Ensure that the EPCglobal Strategic Work Plan is aligned with end-user business priorities.
- Provide collaborative, focused interaction between end-users and EPCglobal on the work and priorities of the overall Action Groups.
- Capture requirements and prioritize the critical path elements needed to support end-user implementations of the EPC and the EPCglobal Network.
- Recommend the Strategic Work Plan priorities to the Business Steering Committee
- Provide visibility into the prioritization and Work Plan process.
- Facilitate a process to assess the delivery of EPCglobal Strategic Work Plan elements and evaluate the effect of changes.

Tag and Label Inlay Standards

- Create a tag and label guideline to enable silicon RFID chip, inlay, tag, RFID printer, and RFID applicator manufacturers to standardize their product offerings to meet the end-user requirements described in the RFID Usability Requirements.

Healthcare Life Sciences Business Action Group (HLS BAG)

The mission of the HLS BAG is to identify Healthcare and Life Science end-user business requirements to the EPCglobal Standards Development Process and promote the adoption and implementation of the EPC and the components of the EPCglobal Network. The HLS BAG will accomplish its mission through the following actions:

- Chartering Working Groups to explore application areas and initiate, refine and complete Use Cases for forwarding to the technical Action Groups.
- Ratifying the technical specifications of the technical Action Groups as meeting the requirements of user Business Action Group requirements.
- Providing a forum for the interaction of end users and Solution Providers to collaborate on the definition of user requirements and the understanding of solutions to those requirements.
- Providing a forum to share learnings from pilots and implementations of the EPCglobal Network.
- Acting as the primary representative body of users of the EPCglobal Network and coordinating the activities of the BAG with those of other groups that may contribute to the work of driving adoption of the EPCglobal Network.
- Representing a global scope of interest in the EPCglobal Network by users and ensuring that geographic opportunities and challenges are recognized. It is the intention of the BAG to recognize global scope through Use Cases rather than through the chartering of separate user groups on different continents or in different countries.

HLS BAG Working Groups

Information

- Recommend information business requirements and related process for the Healthcare and Life Sciences supply chain for use cases as identified and prioritized by the Strategic Planning Work Group. The initial priority will be on the "safe and secure supply chain use case" (Refer to attached Scope Definition). The recommended business requirements and processes would include: numbering systems, data retention, data ownership/visibility/information sharing and EPC assignment processes.
- Create information business requirements supported by meta data standards would allow supply chain partners to communicate business sharing with a common set of elements, as well as enabling healthcare stakeholders to effectively utilize RFID within their internal processes.
- Recommend business requirements that would ensure that the hardware (HW) and software (SW) development groups have the requirements and incorporate the standards needed to support various Healthcare business processes. The Information Working Group will propose business requirements based on existing healthcare protocols and needs while evaluating their adequacy when using RFID technology.
- Provide an Information framework encompassing business protocols and methodologies from a board healthcare constituency to communicate their RFID related data practices to consumers, internal and external business partners.

Policy

- Promote the adoption of RFID and EPC technology within the healthcare supply chain by developing opportunities for the enabling regulations, guidelines and mandates to be enacted, promoted or enforced through existing industry channels of communication and bodies of influence.

- Achieve the business Use Case objectives set forth and prioritized by the HLS Strategy workgroup and the aligned with the deliverables of each supporting HLS workgroup, by:
    - Identifying the key stakeholders involved in each use case and deliverable and determining where regulatory compliance, public policy, privacy, security, patient and consumer education, and business policy matters may be involved.
    - Soliciting input from and collaborating closely with industry experts to determine which regulations, guidelines and mandates may be either enabling or impeding to the cause of advancing the stated use case objectives and deliverables of the HLS Working Groups.
    - Educating and strategically advising the HLS Working Groups on policy matters specific to their individual deliverables by formally presenting factual information, educated opinion, and informed recommendation.

Process

- Develop business processes as defined and prioritized by the Healthcare and Life Sciences Business Action Group Strategic Planning Working Group.
- Develop the business processes that will outline the key EPCglobal HLS BAG use cases and define the underlying process descriptions and scenarios that will assist in identifying RFID enabled information and technology requirements, especially those requiring the definition of global standards vetted by the EPCglobal.
- Provide specific input to EPCglobal Strategy, Technical and Business Action Groups, and other standards-setting bodies in the extended healthcare and life sciences supply chains as related to the application and use of RFID technology to track, trace and authenticate articles of commerce.
    - Development of specific Use Cases, and Scenarios, which describe in detail (i) the route traversed by articles of commerce and (ii) business interactions involved at each node of the supply chain, focused initially on compliance with pedigree laws and U.S. Food & Drug Administration (FDA) guidelines.
    - The scope of the Use Case includes all nodes beginning at the point of pharmaceutical packaging and ending at the decommissioning at the hospital or retail pharmacy.

Research and Development

- Develop requirements for further research as defined and prioritized by the Healthcare and Life Sciences Business Action Group Strategic Planning Working Group.
- Review and summarize the existing research on the effect of RFID on products, humans, and the environment.
- Survey the major stakeholders in pharmaceutical applications of RFID technology on the research they have performed, the areas in which research is continuing, and their willingness to share results.
- Coordinate with academic RFID thought leaders to assess the state of the art in RFID research, including MIT, Michigan State, and the University of Adelaide, Australia.
- Examine and summarize research on the effect of cold chain on RFID technology.
- Review research concerning the effect of sterilization procedures on tag performance.
- Determine plausible scenarios and timelines for sensor technology development.

Strategic Planning

- Develop and manage the execution of a Strategic Work Plan, designed to coordinate and prioritize the activities of Work Groups within the HLS BAG.

- Provide specific input to other EPCglobal Action Groups and other standards-setting bodies, as appropriate, regarding the requirements for standards, policies, and agreements between and among trading partners and regulatory bodies in the extended healthcare and life sciences supply chains as related to the application and use of RFID technology in general and the EPCglobal Network, specifically, to track, trace and authenticate articles of commerce.
    - Relative to the HLS BAG goal of providing for a safe and secure supply chain for pharmaceutical products, we will commission the development of specific Use Cases, and Scenarios, which describe in detail (i) the route traversed by articles of commerce and (ii) business interactions involved at each node of the supply chain, focused initially on compliance with international laws and regulations, State pedigree laws and US FDA guidelines (see "Combating Counterfeit Drugs: A Report from the Food and Drug Administration", February 18, 2004).
    - Commission the development of specific Use Cases, and Scenarios, which describe in detail (i) the route traversed by articles of commerce and (ii) business interactions involved at each node of the supply chain, focused on elements that may include enhancing supply chain efficiencies, improving care provider efficiencies and effectiveness, and enhancing the patient/consumer experience, compliance, and safe usage. It is recognized that medical and surgical devices, over-the-counter medications, vaccines and biological materials, durable medical equipment, and many other specific examples of goods, other than strictly pharmaceutical products, must be addressed in these Use Cases and Scenarios.
    - Prioritize the critical path elements needed to support end-user implementations of EPC technology and the EPCglobal Network.
- Provide for collaborative, focused interaction among EPCglobal end-users, staff, other BAGs and Working Groups, and appropriate Work Groups of the HLS BAG regarding the work and priorities of the individual Working Groups.
    - Identify cross-Working Group issues and concerns, coordinate and help facilitate collaboration to prevent duplication of effort, ensure timely progress towards desired outcomes.
    - Provide visibility into the prioritization and Work Plan process.
- Ensure that the HLS BAG Strategic Work Plan remains aligned with the business priorities of EPCglobal Subscriber companies.
- Actively recruit members to ensure global participation in the process of providing input to the development of appropriate standards, and include representation from all segments of Healthcare & Life Sciences businesses.

Technology

- Serves as a technical resource to the other work groups inside the HLS BAG.
- Investigate specific issues that those work groups may pose to the Technology WG.
- May also serve as the primary author of some use cases and other business / functional requirements documents on behalf of the HLS BAG, depending on the nature of those use cases.
- Address technology issues as defined and prioritized by the Healthcare and Life Sciences Business
- Action Group Strategic Planning Working Group. Topics for consideration as use cases could come from (a) the chairs and other work groups of the HLS BAG, (b) the EPCglobal HAG and SAG members seeking more detailed requirements to support their work, and (c) the Technology work group's own investigation and research into EPCglobal technology challenges. In this latter case, the Technology WG will identify and prioritize issues, and recommend work plans to create the appropriate requirements documents.

FMCG & HLS Joint Working Groups

The mission of the FMCG and HLS BAG Joint Working Groups are to collaborate on areas of overlap between the two BAGS and identify a single set of business requirements to the EPCglobal Standards Development Process. Physical meetings of the HLS BAG are held on a quarterly basis. Conference calls are held on a weekly basis or as needed by each Working Group.

FMCG & HLS Joint Working Groups

Applied Tag Performance Working Group

- Create performance tests specifications for applied tags whether it be the primary, secondary or unit load. These specifications will be designed to conform to specific regulatory bodies that exist in Europe, Asia and North America.
- Develop, publish and maintain EPCglobal laboratory accreditation criteria for Applied Tag Performance (ATP) evaluation by defining & developing ATP methodologies; and publishing, maintaining & updating ATP Specifications (Standard Specifications in EPCglobal nomenclature) for EPCglobal accredited labs.
- Develop, publish and maintain an EPCglobal laboratory accreditation process for site certification of ATP Specifications conformance by defining certification requirements and processes.
- Act in an advisory capacity to EPCglobal to promote adoption.