

Designing Discovery Services

Search engines for the EPCglobal Network will allow companies to find and share data securely.

By Mark Harrison



The EPCglobal Network will allow companies to track products through the global supply chain, providing real-time or near real-time information that they can use to make business processes more efficient, monitor the life history of individual objects and become more responsive to customers' needs. But to realize these benefits, companies will need to share some information—and partner companies will need to know where to find it. One of the fundamental design principles of the EPCglobal Network is that each company should be able to keep control of its own data and decide which data to make available to whom.

Electronic Product Code Information Services (EPCIS), a set of network standards ratified in April, will provide an easy and secure way for organizations to share EPC-related data. They will provide a common way to access information, independent of the information system or database used to store data, so companies will not need

to use a different query mechanism for each organization they deal with.

To find information about a product with an EPC, anyone can query the Object Name Service (ONS) to look for the address of the manufacturer's EPCIS. But many other organizations across the supply chain may also have—and control—some relevant information about that object, such as the maintenance history of an aircraft part. So how do you find—and gain access to—all these fragmented sources of information?

That's where Discovery Services come in. Think of Discovery Services as restricted-

access search engines for the EPCglobal Network. Just as you can query a Web search engine with a keyword and obtain a list of Web links to read further information about a particular topic, authorized users will be able to query a Discovery Service with a unique ID (such as an EPC) to obtain a list of links to information services (such as EPCIS), which they can then query directly for more detailed information.

At the Auto-ID Labs in Cambridge, we are actively involved in the design of Discovery Services, as part of the EU BRIDGE (Building Radio Frequency Identification for the Global Environment) project, a joint venture with 30 partners from 12 countries. One of the major challenges in the design of Discovery Services is security—especially authentication, privacy and managing access controls. Another significant challenge is scalability, because Discovery Services could handle several billion records—perhaps via a cooperating network of several servers per Discovery Service.

We expect to have a working prototype completed by the end of 2007, which will contribute to future standards development on Discovery Services. EPCglobal has not yet chartered a technical work group on Discovery Services, but a number of technology solution providers agree on the need for standardized interfaces, to maximize interoperability between the different solutions.

The design of Discovery Services will also be relevant to other RFID initiatives such as product life-cycle management, as well as in the aerospace sector to track the history of aircraft parts. ■

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