

# Consensus Reached on EPC Gen 2

The Freedom and Global proposals for EPCglobal's UHF Gen 2 specification have been merged into a single submission, paving the way for a new EPC standard.

By Mark Roberti

June 24, 2004—After several long, intense meetings, leading RFID vendors supporting two rival proposals for a second-generation UHF Electronic Product Code standard have agreed to a consensus proposal. The agreement paves the way for [EPCglobal](#), the nonprofit organization commercializing EPC technology, to create a global standard for tracking goods in the supply chain with UHF RFID tags carrying EPCs.

The path to a consensus began in Chicago last week. Members of EPCglobal's Hardware Action Group, which is overseeing the process of creating a Gen 2 standard, held a two-day meeting, arranged by [Zebra Technologies](#), at the Hotel Sofitel. At that meeting were representatives from companies supporting one or the other of the proposed specifications that were being considered for adoption. Backing the Global proposal were representatives from [Intermec](#), [Philips Semiconductors](#), [Texas Instruments](#) and 10 other companies; promoting the Freedom proposal were representatives from [Alien Technology](#), [Atmel](#) and [Matrics](#). (Zebra was officially part of the Global proposal but also supported the Freedom proposal, which is why it played a role in setting up the meeting.)

The aim of the meeting was to see if the two groups could compromise and create a single consensus proposal. When the sessions began, few in attendance thought the gap could be bridged. One of the key sticking points between the two groups was their differing approaches to intellectual property (IP). The companies backing the Global proposal were insisting that companies contributing their IP to the specification should be compensated on a reasonable and nondiscriminatory basis. The backers of the Freedom proposal were saying they would contribute their IP to their specification royalty-free and they wanted others supporting their specification to do the same, which was unacceptable to Intermec and other members of the Global team (see [Intermec Sues Matrics](#)).

Sue Hutchinson, EPCglobal's product manager and facilitator for the organization's Hardware Action Group, began the meeting by distributing a three-page document stating EPCglobal's IP policy and how it relates to the proposals. She suggested that the two teams put aside the IP issue and deal with it later under the IP policy. Essentially, the idea was to develop the specification first and then later figure out what IP went into the specification and how it should be handled.

With both sides agreeing to remove the IP issue from the standards-establishing process, the teams began hashing through the technical differences between the two proposals. The details involved esoteric issues related to how tags and readers communicate, including something called the "state machine," which controls the transistors on the microchip. The real issue at stake in the protocol battle, however, was which team of vendors would emerge with a head start on the other. The Freedom team believed that the Global team was already developing silicon microchips based on the Global proposal, and if that proposal was accepted intact, members of the Global team would be able to get Gen 2 tags and readers on the market quickly, thus stealing a march on the vendors backing the Freedom proposal.

Both teams compromised, and the meeting in Chicago ended on Wednesday, June 16, with an understanding about how the two proposals could be merged. The Global team would incorporate some aspects of the Freedom proposal into a new proposal, dubbed the Chicago protocol. They submitted the revised proposal to the Freedom team by noon on Saturday, June 19. The Freedom team made some minor modifications to the Chicago proposal and on Monday sent it back to the Global team, which had half a day to make more comments.

On Wednesday, June 23, the two teams held a teleconference that began at 12:30 pm EST and lasted until 6:30 pm. The teams worked out the final details of how to implement the changes they had agreed upon. That evening, Gaylon Morris, general manager of West Coast operations for Met Laboratories—a company that tests and certifies that equipment complies with standards—sent an e-mail to members of the Hardware Action Group (Met Labs was brought in by EPCglobal to act as a neutral intermediary with RF engineering experience). The memo began:

Consensus has been reached on the merging of the proposals from each of the two teams on the following conditions:

The "Chicago" protocol is the base document.

The amendment process will follow the GSMP [Global Standards Management Process].

The e-mail spelled out how several technical issues would be dealt with and said that both teams agreed that they will accept the "best engineering outcome resulting from engineering discussions" during the comment phase of the standards process. EPCglobal will issue a last-call working draft of the standard, and EPCglobal subscribers will have a chance to comment on the draft. Prototype tags and readers will be evaluated, and then in October, EPCglobal's board will formally ratify the draft and it will become a standard.

Some observers feared that a consensus proposal could be technically inferior to either the Global or Freedom proposals because it would contain a mishmash of elements from two different RFID protocol designs. Both sides say that is not the case. "Each company brought in technical experts, and those experts learned from each other as the meetings went on," says one member of the Hardware Action Group who didn't want to be identified. "The industry wound up gaining in this process of technical sparring. It resulted in a truly superior protocol."

An EPCglobal spokesperson said the organization was not ready to comment yet on the consensus, and several vendors declined to speak on the record about it, citing EPCglobal's confidentiality rules. But it's clear that the RFID vendors that are part of the Hardware Action Group can now begin to develop products based on the Chicago protocol. There will be tweaks during the standards-development process that will need to be incorporated into final products, but vendors will race to be among the first to have tags and readers based on the Gen 2 spec on the market so they can grab market share.

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