

# The Andover Working Group

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To establish a common implementation of data interchange standards in healthcare, in 1996 HP's Medical Products Group led the formation of the Andover Working Group (AWG) for open healthcare interoperability. This program is an industry-wide effort to accelerate plug-and-play interoperability between healthcare computing systems. The lack of compatibility among information systems is one of the most frequently cited information technology problems facing the healthcare industry today.

In 1996, the core membership of AWG included fifteen healthcare vendors and three healthcare providers. Each of these organizations contributed engineering resources to work on defining the enterprise communication framework (ECF) for HL7. In addition, in 1996, the AWG supporting membership included over one hundred additional vendors and providers. These organizations attended early review meetings of the ECF and provided the AWG with feedback and guidance about its processes, technology, and future directions.

The objective of the AWG is not to define new standards for interoperability. Instead, the AWG seeks to increase the commonality among the implementations of relevant healthcare computing standards. Standards such as HL7 walk a fine line between being prescriptive enough to be useful and being flexible enough to be widely accepted in the industry. However, inherent in this flexibility is the opportunity for implementers of the standard to make different implementation decisions. Different and often incompatible implementation decisions reduce the likelihood that systems will interoperate.

To overcome these problems, the AWG has developed an implementation of HL7. This implementation consists of detailed message profiles in which the specific HL7 messages that ECF-based applications can send and receive are described. The software that enables applications to use these messages easily is also provided in the implementation. The core of this implementation is a software component called an *enterprise communicator*.

The derivation of ECF message profiles involved the iterative refinement of an elaborate object-oriented information model by the AWG representatives. The enterprise communication framework software follows the component architecture described in this article. The result is a high degree of interoperability in the form of data interchange between healthcare systems without the usual system integration costs.

The first example of ECF-based interoperability was demonstrated in October 1996 when twelve applications developed by six different vendors, running on three different computing platforms, were modified to use the ECF software. The applications were able to participate in a detailed scenario that simulated a patient's admission to a hospital, ordering of a series of laboratory tests and reporting of the corresponding results, and an eventual discharge from the hospital. This level of interoperation was the first concrete proof of the effectiveness of the AWG as an organization and of the ECF as truly enabling software.

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