

### 3.2 Project Evolution with Compumotor Influence

Compumotor was so interested that they proposed to have a meeting with them at their company in Rohnert Park, California. On February 3rd and 4th, both Dave and Jay traveled to Compumotor and met with Stuart Goodnick, John Stroup, Bob Cook, Joanne Botka, and Kevin Holloway. The software model was described on a very general level for we, at ROY-G-BIV Corporation, were very concerned with Compumotor's intentions behind their interest in the project. After the general meeting with Compumotor, negotiations began over a non-disclosure agreement. During the negotiations with Compumotor over the NDA, Dave compiled the first specification for the XMC Motion Control Component software model. To create the first draft, catalogs describing most of the main motion functions implemented by each hardware vendor, were collected from each of the original eight vendors. Catalogs, from each of the eight companies listed above, and the DMC1000.HPP<sup>1</sup> header file listings from the Micro Encoder Project (completed in 1993), were used to define the first set of functions making up the Motion Control Application Programming Interface (MCAPI) and the Motion Control Service Provider Interface (MCSPi). The overall design of the model was derived by Dave Brown from a mixture of ideas originating after reviewing the following software models:

1. Microsoft ODBC and ODBC32
2. Microsoft Windows Sockets
3. Microsoft TAPI
4. Microsoft WOSA/XRT - extensions for Real Time Markets.
5. Microsoft WOSA/XFS - extensions for Financial Systems.
6. General WOSA (Windows Open Service Architecture)

Most of the software models, listed above, existed prior to the creation of the first draft. Final drafts for both of the WOSA extension models were released shortly after the first draft of the XMC Motion Control Component specification, and ideas derived from these models were implemented in the second draft of the software specification. The first draft was completed on April 12, 1994. After receiving a signed non-disclosure agreement from Compumotor, the first draft of the specification was sent to them and a second meeting was scheduled. At this meeting, both Dave and Jay met with Stuart Goodnick, John Stroup, Joanne Botka, Bob Cook, and Mark McClung. Mark McClung brought up several key suggestions that were integrated into the overall specification one of which was a suggestion to reorganize the interfaces in a more object oriented manner. He did not specify any specific interfaces but his input prompted Dave to change the interface organization drawn up in the second draft. In addition to the interface reorganization, the second draft contained a more detailed description of the overall software model, including a description of how remote procedure calls (RPC) would be integrated into the model. Also, details on using the model from Visual Basic or Visual Basic for Applications was fleshed out. Shortly after the second meeting with Compumotor, a second NDA was drafted with the intention of protecting all work ROY-G-BIV performed on the project regardless of the suggestions Compumotor made. On May 19, 1994, Stuart Goodnick of Compumotor signed an NDA specifying that ROY-G-BIV could use all suggestions made by Compumotor without risk of losing any ownership rights in the project. Compumotor gave these suggestions and eventually sent a version of their AT6400 motion control hardware for use by ROY-G-BIV during the development of the first phase of the software model.

During the next couple of months the project was delayed for Dave started a new office in White Salmon, Washington. Around September 15, 1994 Dave and Marc McClung conversed, via e-mail, every month or so and the evolution of the specification began. Most of Marc's inquiries

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<sup>1</sup> During the work on the Quick Vision Product for Micro Encoder, Inc. ROY-G-BIV Corporation was assigned the right to use certain "low-level" modules through the original contract for the work performed by ROY-G-BIV Corporation on the project. The main modules making up the driver used to control the Galil DMC1000 motion control hardware, including the DMC1000.HPP header file, are included in this list of "low-level" modules.