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“ I came in contact with Quantum Leaps about a year and a half ago, when we looked at developing a UML based design flow. After trying out a couple of different case tools, we came to the conclusion that expensive round-tripping UML tools were cumbersome and did not fit our way of working. However, the innovative QL way to map UML state machines to C/C++ code was exactly what we were looking for. Important features were:

- No tool dependency (except a drawing tool).
- All code is human readable and possible to debug.
- Cross-platform development.



I am now in the process of finishing a QL 2.6 project for a customer, developed with an open source license. I believe that the product release will be within the year, and I expect the customer to negotiate licensing for the product line.

My impression is that the customer has been very satisfied with the project progress. QF was used extensively on Win32 and a framework of mock hardware objects were developed early so it was possible to run GUI and behavior simulations before actual hardware existed. QF was ported to a proprietary RTOS for the target platform with a minimum of effort, and the code worked with very few exceptions as expected from the Win32 simulations - none of which QF was to blame.

The target design implements eight FSMs in four active objects, where the most complex FSM is implemented by four orthogonal FSMs ranging from 7





to 21 states. The simulation and test code is almost the same size and complexity and consists of four active objects running in an MFC application.

The only downside I can think of is that it takes some time to educate people about the coding style, and the event processing do's and don'ts. It will also require discipline to keep state charts and code in sync, but my experience is that it really is not that hard.

In conclusion, using QF for implementing hierarchical FSMs have proved to be a very powerful way of implementing the essence of a system's behavior, and is a tool that I am sure that we will use in many new projects.”

— **Henrik Bohre, Embedded Systems Consultant,
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