Market Requirements Document

Feature Name: Dynamic Schema

Version: 1 **Completed By:** Brian Clark **Date Submitted:** 03/15/2007

Description of the Problem

Many of our newer customers, particularly in the Complex Manufacturing, Process Control & Automation, and Intelligence space require the ability to dynamically update the schema, either modifying existing classes or introducing new classes without the need to bring down the application to compile the new/modified classes into the application.

In Complex Manufacturing and Process Control & Automation this comes about as new equipment types are added that were not know at the time the application was built, either by updating the factory or acquisition.

In the Intelligence space this comes about as new knowledge is discovered from existing information resulting in new object types and relationships.

Today this can be built in at the application level using the meta-schema approach. We have a number of customers that have done this, e.g. Osmose and CSE. It would be beneficial if Objectivity provided an easy to use API to achieve this so our customers did not have to re-invent the wheel themselves every time.

Description of the Requested Feature

1. An easy to use API for creating new and modifying existing classes.
2. An easy to use API for creating new and modifying existing instances of these classes.
3. This feature should be compatible with existing schema created through the language specified mechanisms.

Part of an existing feature or does it require another feature, if so, which one?

This is a new feature that leverages existing strengths:

- Schema Model,
- Object Model

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Conceptual Overview

How is this problem being solved now and why isn't that acceptable?

Developers currently have to develop their own implementation using a meta-schema approach or by creating a class hierarchy that is parallel to Active Schema's, that keeps track of the current edit state, and that generates Active Schema proposals to commit changes. Both approaches are difficult and time consuming to implement and can be a major objection to using Objectivity for dynamic schema applications. The Meta schema approach will always be available for specialized needs, but we need to provide an easy to use out of the box solution for working with our schema directly.

What languages must support this capability?

C++, C#, Java, Python

Which platforms must be supported?

- All.

Do any competitors already have this feature?

- TBD

Customers who require this feature

- Intelligence community customers and integrators.
- Manufacturing and PC&A applications.
- May be applicable to others

Revenue at risk, or which could be won

When is this required?

- Release 10.

Additional Notes

1. Samples and documentation will be needed.

2. Training needs to be updated.