

# Software development & QA Practices

All products developed by Uppsala Monitoring Centre (UMC) are thoroughly verified and validated before commercial release. Our strict development process, along with our documentation on both the use of the software and the technical details, ensures that all information provided by UMC applications is valid and correct.

### Software Development Process

UMC uses an Agile Software Development Life Cycle that is focused on iterative software development. During the development phase, the requirements/design for the project are defined, developed, verified and validated by a development team consisting of both developers and testers. The development cycle is iterative, and the product is continually refined as development occurs.

### Development standards

All products and product components developed by UMC must adhere to technical strategies and guidelines for software development per UMC's internal document. Each product increment is reviewed to ensure compliance with requirements.

### Source Code Management

All source code is managed according to UMC internal policy for source control. The source code is under version control to enable change management through the use of third party source control software and all product builds are versioned using a standard numbering scheme.

### QA and Testing Procedures

The development team is responsible for defining and executing the development strategy to ensure all requirements on the system are fulfilled. The procedures involve detailed and comprehensive testing efforts by multiple individuals over time and thorough management of all identified issues. In parallel with the requirement testing, user representatives perform validation activities on the system to ensure it is fit for its intended purpose.

### Release Decision, Installation & deployment

The release decision is made by CIO in agreement with Product Owner and QA. The decision is based on the status declaration from the development and production phases.

Deployment is made in coordination with IT operations staff and post-deployment tests are carried out to make sure that the software behaves as expected in the production environment.

### Production and maintenance

As defects and enhancements are identified during the operation and support phase, they are documented and evaluated for either immediate action or inclusion in a future release of the software.

The respective Product Owner determines that a release is needed based on monitoring of market needs and reported issues. Once a release is approved, a development team is assigned for development of the desired requirements and according to target release time frames.

### Independent Software Evaluations

UMC maintains test records for all current versions of commercially released applications, including detailed records of all modifications and issues found and addressed during the testing phase and subsequent deployment. These records are treated as "Proprietary and Confidential" and are not made available to the general public. In special circumstances, UMC is willing to make such records available to clients or other third parties.