

Model, design and test systems with Xcarecrows 4 MDA

Features

Xcarecrows 4 MDA, Eclipse plugin provides a graphical tool set to design system or application models according to the MDA process defined by the Object Management Group. It focuses on the quality of the behavior modeling and automatically converts models into executable components whose interfaces with the environment are well-defined.

Corporate sense

Cogenit **Xcarecrows 4 MDA** offering is Eclipse Ready™. It can be installed and used with Eclipse 3.2.1 or above.

Xcarecrows 4 MDA, version 1.2.8, is Ready for IBM Rational Software. **Xcarecrows 4 MDA** can be used with Rational Software Modeler™, Rational Application Developer™ and Rational Software Architect™.

Functional description

The method is based on :

1. modelling applications and operation needs
2. simulating products and their combination in the system application
3. homogenizing accesses to data basis
4. traceability

for applications:

- defined in a consistency checked with XML and ASN1
- designed according to an UML model
- implemented with MDA
- validated with MDA
- securized through cryptological techniques
- modelled with UML
- automatically coded for most of it
- structure and data documented with UML
- traced from initial requirement definition through implementation and test up to final validation

Detailed description

Xcarecrows 4 MDA builds systems or products models with UML and RSM by IBM. It :

- Splits control and data handling
- Sets a hierarchy of functions
- Checks data consistency
- Follows documents up

This method covers the lifetimes of new or existing systems and products. This capability insures an optimized safety. Specifications are clarified while capturing, designing and maintaining.

Xcarecrows 4 MDA separates the system through successive refinements. Its efficiency is based on



UML expressivity.

Right from the definition, the system simulation makes reliable and validates the process, saving time and money. When audits are required, an optional master referential of the shared data can be implemented to avoid inconsistencies and operation failures. It

- Pilots operation information and customer's data
- Simplifies data access
- Insures perfect exchanges

The master goes through

- Information identification and extraction
- Feeding of the referential
- Definition of the rules for qualification, update, access and exchange
- Information systems integrity maintenance

The traceability keeps the consistency between the steps and checks that

- What is required has been taken care of
- No function is out of scope

It links

- Specifications
- Design documents
- Tests
- Deliverables
- Discrepancies, risky items

To broaden the scope of the test and simulation, **Xcarecrows 4 MDA** hooks external applications encapsulated on specific extension points of the model. It is thus possible to analyze models, applications and systems whatever level of complexity or detail.

Xcarecrows 4 MDA helps user to design applications with :

- a graphical editor to design models ;
a graphical editor to design models and to compare them amongst a team with **Xcarecrows 4 XMI Compare**;
- an integrated checker to validate the models ;
- a test and coverage tool to check that each part of the model has been visited at least once.

Applications designed with **Xcarecrows 4 MDA** feature :

- a hierarchic model wherein operations on data and control logic are mutually insulated
- code generation most of the code with the model
- a documented model
- seamless interfaces with existing applications
- database harnessing

Competitive benefit

This structured process covers the products and systems life cycle and securizes them. The technical, cost and lead times hazards related to the development are under control. The graphic interface increases the efficiency and reduces the number of errors. The shared data referential makes operation optimization possible avoiding inconsistency and malfunctioning. A more accurate change management



makes possible a better evaluation of the consequences and an improved control of the work load of teams. The centralization gives the possibility of a real return from experiences. Cogenit "turn key" expert, adjust this process to the customers' needs. Cogenit has Owner's and Engineer's proven records in the field of telecommunication, information system as well as their respective systems.

Business problem

The graphic interface increases the efficiency and reduces the number of errors. The shared data referential makes avoiding inconsistency and malfunctioning possible in the professional process. A more accurate change management limits evaluation errors of the consequences and of the work load of teams. The centralization prevents errors due to incomplete incident reports. The automatic production of software reduces errors.

Business opportunity

Software development method of the MDA (Model Driven Architecture), as promoted by Object Management Group (OMG), *Xcarecrows 4 MDA* and *Xcarecrows 4 MDI* cover the life cycle of products and systems and make operate together the new and the existing. It allows the level of quality required the professional safety norms. The system functionality are defined in an independent UML model, then translated in state machines for an automatic development of the software. This approach models, simulates and assembles products, homogenizes data access and, as an option traces. The UML modelling clarifies the specifications as : needs are captured, a new application is designed, existing systems are maintained. A visual support close to GRAFCET makes exchanges easy. Systems components are separated in a top down process to sharpen the representation. Expressive diagrams and the UML convention choice make the communication efficient. Right from the definition of needs and before any investment, a simulation handles the data structure. It makes reliable and validate the process, saving time and money. In case of an audit of the process, a master referential of the shared data makes operation optimization possible avoiding inconsistency and malfunctioning. The implementation applies UML standards to show the professional process and define iteration. The traceability keeps the consistency among the stages of the life cycle. A each stage, it checks that: What is required, has been taken care of, No function is out of scope.

Return on investment

Right from the needs definition and before investing, to catch the system behaviour, a simulation handles the data structure. It makes reliable and validates the process, saving time and money. The graphic interface increases the efficiency and reduces the number of errors. The traceability makes more efficient the consistency checks at the data level as well as the operation simulation. *Xcarecrows 4 MDA* and *Xcarecrows 4 MDI* introduce an easy implementation of the other Xcarecrows tools (cryptology, ASN.1, Voice over IP). Starting from the graphic representation, the software automatic elaboration allows great time savings and reduces the number of errors.

User interaction

The editor of *Xcarecrows 4 MDA* builds on top of Eclipse IDE to provide the user with a familiar, tree structured view of his MDA documents. Supported by a built-in graphical editor, it handles the core editing functions made available to the user. To improve efficiency, a discrete wizard helps choosing



amongst the *Xcarecrows 4 MDA* features.

Validation

Xcarecrows 4 MDA and *Xcarecrows 4 MDI* check the validity of the applications through their models and at model level. Errors and warnings are reported in a dedicated view of the graphical environment. The user refines his application with new features or with finer grained behaviours. The built-in test tool checks that each element has been visited at least once.

Implementation and Integration

To design real-world applications, *Xcarecrows 4 MDI* and *Xcarecrows 4 MDA* deal with :

- database connectivity with the Hibernate framework
- multi-threaded applications
- black box/gray box existing application encapsulation and interfacing with the user solution

Open source

Xcarecrows 4 MDA is available under the Open Source [Apache License version 2](#). Download *Xcarecrows 4 MDA* :

- with Eclipse Update Manager (<http://www.xcarecrows.com/eclipse/site.xml>)
- from [SourceForge.net](#)

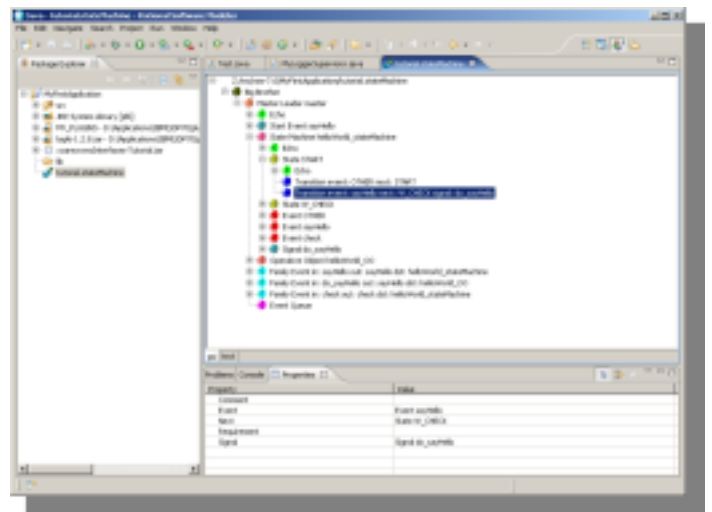
Related standards

Xcarecrows 4 MDA uses the standards below:

- OMG Unified Modeling Language 2 (UML 2)
- OMG XML Metadata Interchange 2 (XMI 2)

Xcarecrows portfolio

- *Xcarecrows 4 Developers Edition*
- *Xcarecrows 4 MDI*
- *Xcarecrows 4 MDA*
- *Xcarecrows 4 XML*
- *Xcarecrows 4 SSL*
- *Xcarecrows 4 WS*
- *Xcarecrows 4 X509*
- *Xcarecrows 4 H323*



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Contact



Xcarecrows 4 MDA - product brief



Cogenit can provide any assistance to implement solutions using those plugins.

Send us an e-mail at contact@xcarecrows.com if you need more information or a custom service.

