

:: Tool Comparison Worksheet

Automating development with Domain-Specific Modeling (DSM) involves evaluating existing tools and their features, related costs and availability of supporting services. The list below aims to help you in comparing MetaEdit+ with alternative tools that you may be considering.

With this form you can make your own comparison. Just add any tool you would like to compare MetaEdit+ with into the right column.

Language development

Tool features	MetaEdit+		Tool: _____	
• Several integrated modeling languages		✓		
• Multiple simultaneous metamodelers		✓		
• Language definition tools (metamodeling)	<ul style="list-style-type: none"> • Graphical • Form-based 	✓		
• Integrated metamodeling and modeling (test the language while defining it simultaneously)	Integrated tools	✓		
• Automated language deployment to modelers		✓		
• Metamodel coverage for rules and constraints of the language	<ul style="list-style-type: none"> • Rule and constraint definition tools • Generator-based constraints • Regular expressions 	✓		
• Metamodel checking during language definition		✓		
• Traceability between elements of a metamodel	Bi-directional: <ul style="list-style-type: none"> • Who is using the element • What elements are used 	✓		
• Metamodel evolution	Deployed language can be safely changed	✓		
• A metamodel specifies one or multiple languages	Both possible	✓		
• Automatic models-updating upon metamodel change	Models will always open in editors	✓		
• Support for old language versions		✓		
• A repository to handle various metamodels	Object Repository	✓		
• Import and export of metamodels	<ul style="list-style-type: none"> • XML • Binary formats These can cover also <ul style="list-style-type: none"> • Notation (symbols) • Constraints • Generators 	✓		
• Library of metamodels	70+ languages available	✓		
• Extend UML with stereotypes, tagged values and constraints	Possible, but why? <ul style="list-style-type: none"> • Modifying a metamodel gives more power • Can also remove unnecessary elements, add new types etc. 	✓		

Symbol and representation definition

Tool features	MetaEdit+		Tool: _____	
• Specifying notation for the language	Draw in Symbol Editor or import symbols	✓		
• Rich notation (more than just an icon for nodes and a line for arcs)	Symbols for objects, relationships, roles and properties	✓		
• Symbols can change based on model data	<ul style="list-style-type: none"> • Generator-based symbol elements • Conditional symbols • Regular expressions • Ports in symbol to connect with 	✓		
• Library of symbols available	Several hundred notational elements	✓		
• Import (and export) symbols	<ul style="list-style-type: none"> • Scalable vector graphics (SVG) • Bitmaps 	✓		
• Access and modify notation with any programming language/platform	SOAP/Webservices API	✓		
• Modeling tool development automated	Editors immediately available with <ul style="list-style-type: none"> • icons, menus, toolbars • Copy&paste, replcace • Auto-layout, undo&redo etc. 	✓		

Generator definition

• Generator and metamodel are integrated		✓		
• Supports straight model-to-code transformations	No intermediary formats needed	✓		
• Support for templates, visitor pattern, crawlers and multiple streams		✓		
• Syntax highlighting and output filtering	Generator Editor	✓		
• Generator debugging	Generator Debugger	✓		
• Generated and hand-written code can be separated		✓		
• Protected blocks can be defined into the generated result		✓		
• Many to many mappings from models to files		✓		
• Read and parse external files		✓		

Modeling with your language

• Support for different kind of editors	<ul style="list-style-type: none"> • Diagram • Matrix • Table 	✓		
• Support for modeling operations (copy/paste, reuse, replace, group, layout, grids, zooms, model hierarchies etc)		✓		
• Support for multiple concurrent modelers	<ul style="list-style-type: none"> • Multi-user • Single-user functionality 	✓		
• Automatic validation of models based on the metamodel		✓		
• Constraints can be checked at modeling time or when wanted	Automatically available based on either <ul style="list-style-type: none"> • Metamodel • Model-checking reports 	✓		

Modeling tool features (continue)	MetaEdit+		Tool: _____	
• Link and reuse among models	As defined in the metamodels	✓		
• Models update automatically if a new language version is available	If desired	✓		
• Models can be saved and stored using the older language version	If desired	✓		
• Model browsing tools	Various browsers	✓		
• Document generation	Predefined, customizable generators <ul style="list-style-type: none"> • RTF/Word • HTML 	✓		
• Metrics and model checking		✓		
• Traceability between model elements		✓		
• Import and export of models	<ul style="list-style-type: none"> • XML • Binary format • Includes also representations 	✓		
• Model-to-model transformation	<ul style="list-style-type: none"> • With Generator Editor using XML as intermediary format • Directly using the API 	✓		
• Access and modify models with any programming language/platform	SOAP/Webservices API available for almost any programming language and platform	✓		
• Reverse engineering	<ul style="list-style-type: none"> • With XML import • API • Generator language (MERL) 	✓		
• Trace back from generated code to models	Live-code function: click the generated code to see the model	✓		
• Animate models during program execution (in IDE, emulator or in real target)	Animate with API	✓		
• UML support	UML metamodel is one of the many included	✓		

Other

• Can be integrated with other tools (IDE, versioning, emulator, etc).	Easy as based on most commonly applied integration techniques <ul style="list-style-type: none"> • Webservices/SOAP • XML 	✓		
• Easy to use and learn		✓		
• Other technologies required		⊘		
• Runs on different platforms	<ul style="list-style-type: none"> • Multiple platforms • Heterogeneous platform set-up 	✓		
• Manuals available	<ul style="list-style-type: none"> • Modeling • Metamodeling • Sysadmin 	✓		

Supporting services

• Maintenance		✓		
• Support and helpdesk		✓		
• Training services	<ul style="list-style-type: none"> • DSM creation for experts • DSM use for modelers • Organizational change for Q&A, process, management 	✓		
• Consulting services		✓		