Comparison to other systems - I

Feature	Xcos	Simulink	OpenRTDynamics
Continuous-time simulation	Yes	Yes	only by embedding into Xcos (planned Simulink)
Realisation of Real-time Programms	code generation	code generation	real-time capable interpreter
Description language	GUI-based Blocks	GUI-based Blocks	textural description using Scilab
Ability to obtain well structured code	superblocks	subsystems,	superblocks for sharing code, conditional definition (like compiler flags), for loops, ..., allows to build powerful macros
Possible Target Systems	Rtai, Real-time preemption, with much effort more	Nearly any target	Linux RT-Preemption and normal Linux: PC-based Linux, Android, embedded ARM devices

Comparison to other systems – II

Feature	Xcos	Simulink	OpenRTDynamics
Communication with RT-Programms	only if Rtai is used	Yes	Yes
Implementation of Logic structures	using events (red lines) and signals; cumbersome and much effort	Stateflow, separation of continuous parts and logic	state machines that allow to combine continuous parts and logic; low implementation effort; start/stop/reset of superblocks
Multiple Threads with a separate main loop in each	No	allows to start "Tasks"	Yes: shared memory, ring buffer, events for communication
Time basis of the main loop	regular timer	regular timer	irregular time intervals possible, synchronisation to events e.g.: sensor data available, network packets arrived

Comparison to other systems – III

Feature	Xcos	Simulink	OpenRTDynamics
Including Scilab/Matlab Code into the RT-Program	No	Code based a subset of the Matlab language can be compiled to C-Code	Yes: embedded Scilab interpreter, however no-deterministic execution time. Suggested to only use in separated threads
Replacing Code portions of the RT-Program while it is running	No	No	Yes, the code of specially marked superblocks can be exchanged. The embedded Scilab interpreter can online-compile new superblocks
Automating laboratory experiments with less effort	No	Not sure	Yes, macros that greatly simplify automation tasks using Scilab-Code and replaceable superblocks are available