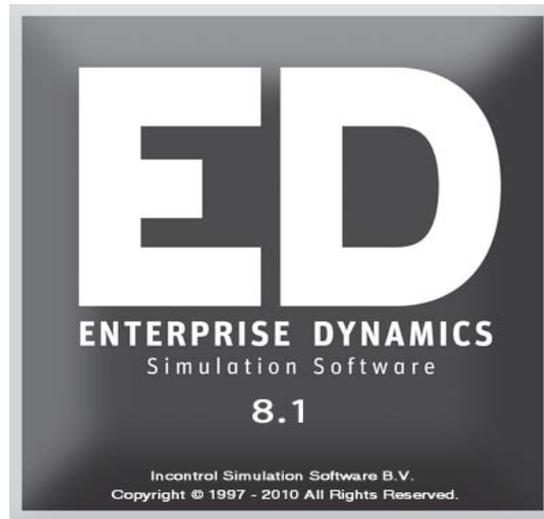


Enterprise Dynamics 8.1 Highlights



INCONTROL
Simulation Solutions

Enterprise Dynamics 8.1



INCONTROL has released Enterprise Dynamics 8.1. In ED 8.1 you will find a lot of user comments implemented. Our JIRA support system has played an important role in defining the developments to Enterprise Dynamics. We implemented more than 180 JIRA issues in the release of ED 8.1. Our simulation engine contains a lot of new features and we also developed new atoms for the Logistics library.

Some of the highlights are:

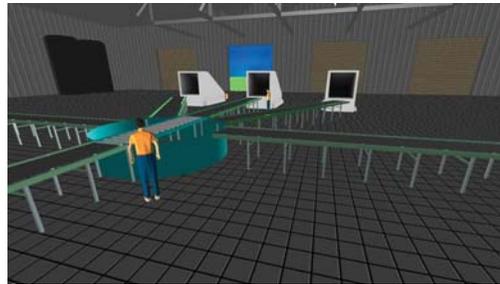
- 3D Visualization: The support of 3D anaglyphs
- XML: Improved handling of XML streams
- New GUI Builder control: MediaPlayer
- New GUI Builder control: SpeedButton
- New GUI Builder control: BitButton
- New GUI Builder properties: font properties and transparency
- New Atom: Advanced Linear Robot
- New Atom: Advanced Scara Robot
- New Atom: Corner Transfer Lifter
- New Atom: Excel ActiveX
- Improved Atom: Elevator
- ...

ED 8.1 will bring an expanded set of tools and features to the market making it easier to model and develop your simulation solutions.

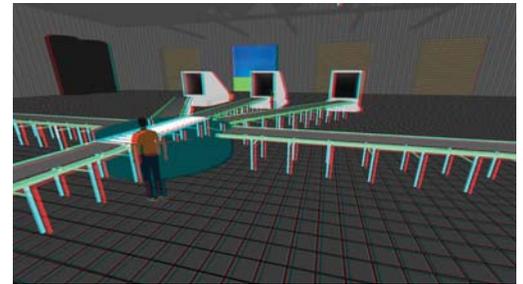
Anaglyphs

Everybody who has visited the movies lately has noticed that 3D is hot! Movies have been shot with 3D in mind or are distributed again in a 3D version. ED already supported stereoscopic 3D but that technology required the use of specialized shutter glasses as well as a display that supports 120Hz.

ED 8.1 now supports anaglyphs. Anaglyphs are a straightforward way of presenting stereo pair images to the appropriate eye. However the technology used are color glasses costing € 0.50. Glasses have two different color filters, for example, red on the left eye and cyan on the right eye. The image that is destined for the right eye is colored in shades of cyan while the image destined for the left eye is colored in shades of red. To support this feature ED comes with a new supportive atom and various functions to be able to set the parameters of the anaglyph view.



Normal 3D



3D Anaglyph View



All you need to do is to open a 3D animation window. When the 3D animation window is shown open the properties window of the new Color Glasses atom and switch the anaglyph mode on.

The settings for eye separation and eye rotation can be used to maximize the effect based on the display you are using. You can also set the type of color glasses you have found available.

Status Atoms in 3D

The attractiveness of 3D status result visualization has been improved by replacing the existing 3DOutline (black box) with 3D animations. Now all atoms of category RESULT subcategory STATUS provide 2D related 3D diagrams.

XML: Handling of large XML streams

We optimized and improved the internal XML handling routines to be able to interpret large streams of XML data. By doing so we also made the XML interpreter a lot faster. Even the XML streams of several megabytes are easily read in an instant.

GUI Builder

One of the key aspects of Enterprise Dynamics is the ability to develop your own user-interfaces. These user-interfaces can be used for a specific atom or as part of the application you develop.

ED 8.1 comes with new GUI components, properties and events that you can use in the design and development of your forms.

BitButton



The BitButton component is a Button component with the addition to display an image in the button area. You can set where the image should be displayed, left, right, top and bottom.



Another interesting feature is the ability to use a glyph. A glyph can be seen as 4 images in 1. Depending on the state of the button a different image is displayed.

Image	Button state
First	This would be the normal display. The button is not pushed or selected.
Second	Disabled. The 'enabled' property of the button is set to false.
Third	The image that is displayed when the button is clicked. The first image is shown again when the mouse button is released.
Fourth	Not used in the BitButton component.

SpeedButton



The SpeedButton component resembles the BitButton, but has the ability to remain in a 'down' state. Combined with a group index property you can create a set of buttons in which one of them is down while the others are in an up state.

You can set where the image should be displayed, left, right, top and bottom. You can also use the glyph property. Depending on the state of the button a different image is displayed.

Image	Button state
First	This would be the normal display. The button is not pushed or selected.
Second	Disabled. The 'enabled' property of the button is set to false.
Third	The image that is displayed when the button is clicked. The first image is shown again when the mouse button is released.
Fourth	Down. The 'down' property of the button is set to true. The button remains down even when the user does not click the button.

MediaPlayer



The new MediaPlayer component allows you to display a movie within your form. You can use the buttons for play, pause and stop directly from the component or you can use the new 4DScript commands GUIMediaPlay, GUIMediaPause and GUIMediaStop.

The movie itself is displayed on a Panel component that you can select with the Display property of the MediaPlayer component. The movie is automatically resized to the size of the Panel.

Font Properties

Many of the components in the GUI Builder can be used to display text. These components now have the ability to change their font settings. You can set the font name, size, style, color and transparency (where applicable).

MultiSelect Property

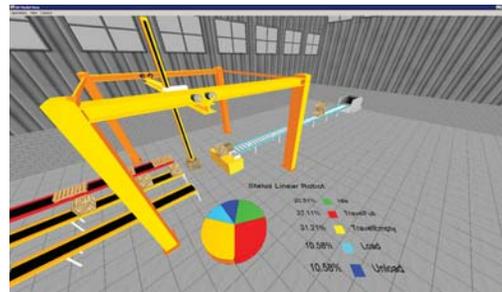
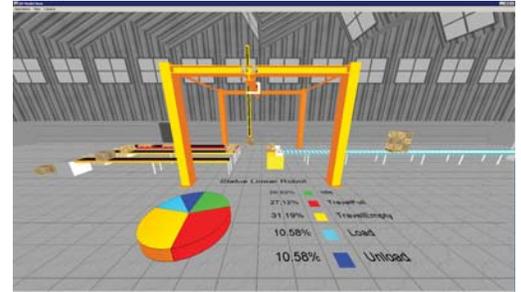
The ListBox component now has a MultiSelect property to be able to select more than 1 item. To see if an item is selected the user is able to iterate the ListBox items.

Click Event

Many components have received an additional click event on which the user is able to define 4DScript code to initiate an action.

Advanced Linear Robot

ED Logistics category ROBOTS has been extended with a Linear Robot. A Linear Robot is a handling tool to model detailed pick-, place- and motion-tasks using variable speed parameters for every transfer direction. Motions are defined based on a world coordinate system. Destinations of grabber (tool) are defined using xyz-coordinates. As already known from the Advanced Vertical Articulated Robot, any kind of action, like loading, unloading, moving and delays is defined within routines. Those routines are stored with global references, so they can be used by other Linear Robots as well.



Every kind of command has its specific parameters like load time or speed to define the behavior of the Linear Robot. There are two ways to define routine motion commands. First one is to move the tool of the robot by hand and then get the coordinates in order to teach the command into the routine. Second one is the other way around when the robot is assigned to drive to user edited coordinates. If the destination has been reached successfully, the coordinates can be integrated into a motion command. Routines can be assigned to tasks. Routine execution is triggered if there is a

task available. Strategies can be defined to decide which routine has to be executed, for what kind of task. The Linear Robot is able to support push and pull systems.

Advanced Scara Robot

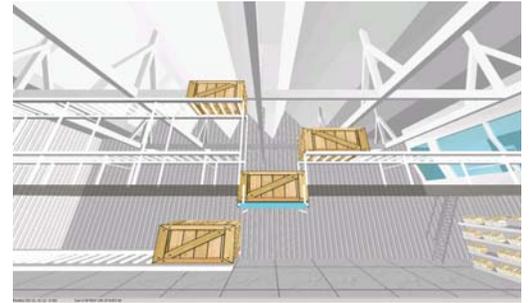
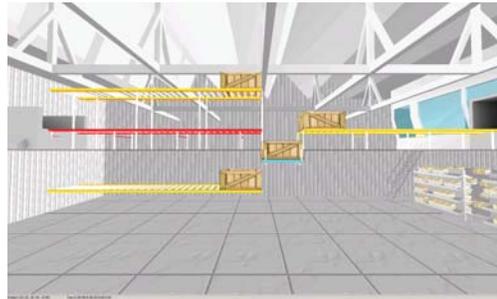
ED Logistics category ROBOTS has also been completed with a Scara Robot. A Scara Robot is a selective compliance assembly robot arm especially for circular pick and place tasks. The sphere of action is limited by the z-size and the radius of action. The handling of routines and tasks is comparable with Linear and Vertical Articulated Robot. Due to the circular design the Scara Robot also covers the requirements of construction cranes – if amply dimensioned in size, radius and 3D visualization.



All Advanced Robots are developed to enable Simulation experts to model detailed handlings without expertise about the various programming languages of robot OEMs. However the design of the Advanced Robots in ED Logistics is in line with the behavior of the real systems. Therefore the Advanced Robots close the gap between simulation knowledge and robot technology.

Corner Transfer Lifter

ED Logistics category CONVEYORS comes with the new Corner Transfer Lifter to expand subcategory INTERSECTIONS. As already known from the Corner Transfer Unit atom, the Corner Transfer Lifter also represents an intersection between any kind of Conveyors to keep Product rotation when turning left, right or moving straight on. In addition the Lifter is designated for accelerated hoisting as well as for smooth input and output motions. The number of possible changes of transport directions is only limited for each level in z. Products can turn left around a corner of 270 degrees, turn right around a corner of 90 degrees or go straight on. On change of elevation level even a transport into counter direction is possible. The Corner Transfer Lifter is the perfect connector between varied levels of conveyor systems.



Release Notes

Below are all the issues handled during the development of Enterprise Dynamics 8.1. We have listed them in several categories and you can find details of all these issues in our online support tracking system. Visit the support section on www.incontrolsim.com to login in to INCONTROL JIRA.

Major Issues

- [APP-225] Category RESULTS: Subcategory STATUS: 3D visualization
- [ED-441] Support for anaglyphs

New GUI Features

- [ED-416] New movie component in GUI builder
 - [ED-392] New GUI Properties & Events
 - Added transparency to several components
 - OnClick event of static text
 - [ED-391] Add SpeedButton component
 - [ED-387] Image button added (Bitbutton)
 - [ED-314] Set font settings of labels and many other GUI components
- Notice: GUIs created in 8.1 are not compatible with version 8.0!**

New Atoms

- [NLS-63] New atom 'Advanced Linear Robot'
- [NLS-64] New atom 'Advanced Scara Robot'
- [NLS-65] New atom 'Corner Transfer Lifter'
- [APP-204] The Excel atom should use ActiveX instead of DDE (New ExcelActiveX Atom)

Other New Features

- [ED-175] Table headers now display default headings
- [ED-195] Request to have ED remember (= store) the table width
- [ED-299] Multi-select for GUI components
- [ED-408] Preference directories direct edit enabled
- [ED-425] New ED function to copy the contents of an atom table to a DB table
- [ED-427] Make the layer window sizeable
- [ED-434] Implement additional network key approval for RKOTM code key
- [ED-438] Function to take a screenshot
- [APP-181] Excel Atom: option to write column and/or row headers
- [APP-221] Scale image with Bitmap atom size
- [APP-223] Additional screenshot options
- [LOG-31] Include a simple example where data is exchanged between ED and Excel using ActiveX

Smaller improvements

- [ED-207] When starting a .mod file, display the filename in the title bar
- [ED-210] 4DScript Command List of function StrSeparate is incorrect
- [ED-266] Error Monitor moves between screens
- [ED-359] Speed up process of finding atom in tree. Tree does always come to front
- [ED-363] Functions get lost when an atom is cut and paste
- [ED-367] Opening 4D script overview (F2) takes a long time
- [ED-368] Close layer window when loading model
- [ED-390] Missing behaviour events of image control
- [ED-396] Options in Run Control not completely visible
- [ED-397] Run Control displays "Running..." after stop time
- [ED-398] Stop time is ignored
- [ED-405] 4DScript command Clipboard to selection never fires OnCreation
- [ED-412] Different up atom between copy/paste and insert
- [ED-428] Run Controller cannot be set to Unlimited
- [ED-447] Atom editor keeps setting the default size
- [APP-18] Destroy GUI on atom OnDestroy
- [APP-186] Add button to view table of the History Viewer Table and set the default value for attribute 4 statusqueue to 1
- [APP-187] Clarify The assembler GUI
- [APP-191] XMLSafeToFile topic in help contents does not exist
- [APP-196] Error in ActiveX Quickstart
- [APP-198] Rotation from the menu does only rotate the atom, not the visualization

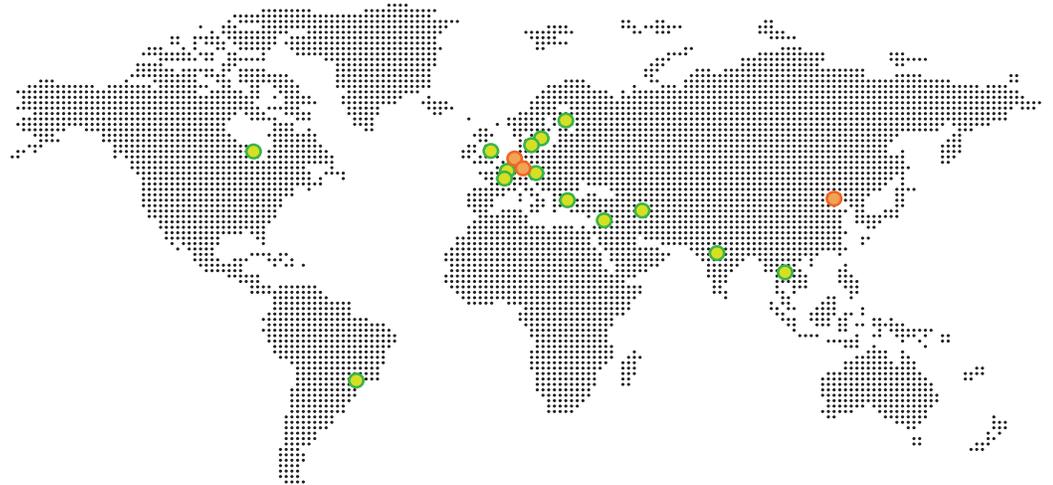
- [APP-199] Server machine 2D visualization differs from 3D visualization
Notice: The 3D visualization of the server has been improved. With multiple ED installations, the new server and old 3D model can raise visualization problems (server looks too big). Setting the 3D models directory in the preferences (to the subdirectory of the used installation directory) can prevent this.
- [APP-207] File | Open should give save routine
- [APP-208] Input verification for Fast Conveyors
- [APP-211] Beta distribution differs from literature
- [APP-212] Clarify help of distributions
- [APP-214] Skip save routine when model was saved just before application exit
- [APP-220] 2D Model View & 2D Model Layout help
- [APP-228] General improvements of the Data Recorder atom
- [APP-231] Close layer window when model is loaded
- [APP-194] Initialize atom OnReset in help
- [APP-215] MTBF MTRR atom is unclear about usage of MTBF or MTTF
- [LOG-131] Category TRANSPORT: Subcategory ROBOTS: Advanced Vertical Articulated Robot:
Adding relative x/y/z destination edit fields to routine GUI

Fixed Bugs

- [ED-202] 2 Gantt functions in the XML category
- [ED-301] 3D view displays corrupted
- [ED-315] Font style and background colour change in GUI
- [ED-324] Some texts have wrong font in Experimentation Wizard GUIs
- [ED-343] The text in the GUI builder when setting a prefixed rotation for the 3D window is incorrect
- [ED-344] Positioning a form with a 2d or 3d object can give problems
- [ED-347] Scroll bar is absent in tab tables in the new atom editor
- [ED-356] Right mouse click executed on "mouse down" and "mouse up"
- [ED-357] View of GUI 'CameraMotionForm'
- [ED-358] Last two events on the Event sheet in the atom editor are not visible.
- [ED-360] 2D3D function keeps pointing to 3D model
- [ED-362] Trace on closing 3D model
- [ED-364] Pressing apply in atom editor does not compile code in the OnInit
- [ED-365] New Atom Editor
- [ED-366] XMLOpenFile returns out of memory
- [ED-370] Cannot set layer on exited or exiting events
- [ED-371] Access violation in new Atom Editor
- [ED-372] Strange behaviour attribute 'binary' of GUI forms
- [ED-374] Name change mode of atom tree
- [ED-376] The runtime version allows creation of models
- [ED-379] Tree icon is not saved
- [ED-380] Sorttable descending (e3 <> 1) doesn't work
- [ED-381] OnCreation eventhandler is executed OnDestruction of Atoms from Tree
- [ED-382] ReadTableFromFile: Headers of file are still imported although setting e5=1
- [ED-383] Treeatom := vtp(pointer value) is no longer working
- [ED-385] Assigning DIM in a function
- [ED-386] Entering viewer license info results in loop
- [ED-389] DisplayEditorfile doesn't work
- [ED-393] Tree Icon does not store selected icon
- [ED-394] Speed button 'Display Labels' throws error message when pressing Cancel-button of Selector window
- [ED-395] 4DScript edit field error monitor unreachable
- [ED-399] ShowRunControlSettings does not hide run control settings tab properly
- [ED-400] Timeframe option of ListEvents does not work
- [ED-402] Treeview does not allow to create child nodes
- [ED-403] Panel resizes on build
- [ED-404] Htmlhelp function does not work under vista
- [ED-410] Error messages while restoring the default directory paths
- [ED-411] Textures all over 3D object
- [ED-415] 4DScript overview shows index error -1
- [ED-418] Switching to Error screen from within the Function Editor
- [ED-419] Arrow not drawn correctly in 2D

[ED-423] Literal mistakes in error messages
 [ED-435] Replace in find replace does not work correct
 [ED-436] Model with product codes messes up the atom editor
 [ED-439] Speed button does saves the glyph with hardcoded path
 [ED-440] Clearing Smart Edit list does not work
 [ED-442] Size form decreases after loading when a main menu control is used.
 [ED-443] Rotation AS of sub atom disturbs mouse movement
 [ED-444] Mouse Paste in editable form fails
 [ED-445] Fail on FileCopy doesn't release file handle
 [ED-446] 3DConnexion Control Panel displays when 3D model view is opened
 [ED-452] License code not accepted; Next not available
 [ED-453] Custom Experiment Result Graph fails
 [APP-115] Arrivallist misses column headers
 [APP-163] Experiment Wizard does not show Raw Data correctly in Standard Report
 [APP-182] Tab order of several GUI's is arbitrarily.
 [APP-188] On the Excel atom there is a GUI option "Excel visible at startup"
 [APP-190] Creating library files does not function properly
 [APP-192] Function 'averagecontent' calculates wrong if time period is not equal with simulation time.
 [APP-195] Moviedirector does not work properly
 [APP-197] Experiment wizard with terminating condition does not include correct time to calculate statuses but uses run length for this
 [APP-201] Movie Director Flight positions don't work
 [APP-202] Atom save routine uses both sets and TreeAtom reference
 [APP-203] Model Documentation is not working
 [APP-205] Help from ModelTreeAtom does not display
 [APP-206] Table Atom copy-paste results in lost alias functions of original
 [APP-209] Atom labels show treeselector where selected atom has no labels but contents do
 [APP-210] ED help crashes after not enough memory available
 [APP-213] The dialogue "Save current model?" does not appear when trying to open a new model.
 [APP-217] The search again option is missing (but works)
 [APP-218] Updating license fails under Windows Vista
 [APP-222] Table atom creates aliases while create alias option is turned off
 [APP-224] Search attribute problems
 [APP-230] Alignment of attribute controls form is not correct anymore
 [APP-232] Problem with new table atom
 [APP-234] Add "Clear on reset" option to new Table atom
 [APP-235] Modernize and simplify the 4DScript code of the predefined logics
 [APP-236] Error with recorder reference in the movie director
 [LOG-30] GUI for the Elevator broken
 [LOG-81] TravelTo command in Elevator uses orientation flag
 [LOG-110] Predefined storage rule of GroundStorage contains error
 [LOG-111] Operator fixed x and y offset don't work
 [LOG-112] GetSendToTransporter routine 7 (by label) uses maximum of output channels from c instead of out(1,c)
 [LOG-113] Sendto strategy of Speed Changing Accumulating Conveyor requires adjustments
 [LOG-114] Advanced Vertical Articulated Robot is swapping task order
 [LOG-116] Portal Crane 2D, Y Direction animation does not follow the crane motion
 [LOG-117] ASRS atom problem in GUI and with channels
 [LOG-118] GUI Stacker asks for wrong unit
 [LOG-119] Elevator Atom: Capacity is recalculated OnEntry of every Product
 [LOG-122] Buffer Conveyor, bug causes loss of settings and wrong visualization.
 [LOG-123] ASRS: Right High Rise Rack: RMG ignores load and unload times
 [LOG-124] Reservoir triggers incorrect
 [LOG-134] Kanban Bin: Unconsidered number of reordered Products.
 [LOG-136] Portal Crane 2D anomaly of subatom 'Y Direction'
 [LOG-137] Operator: Improved Animation 3D
 [LOG-138] Stacker atom loses track of i and first(c) when stack is send out
 [NLS-61] RFID Gate triggers don't work

Contact



● The Netherlands

Papendorpseweg 77
3528 BJ Utrecht

T: +31 (0) 30 670 4015
F: +31 (0) 30 670 5634
E: SimInfo@IncontrolSim.com
W: www.IncontrolSim.com

● Germany

Gustav-Stresemann-Ring 1
65189 Wiesbaden

T: +49 (0) 611 977 74 345
F: +49 (0) 611 977 74 171
E: SimInfo.Germany@IncontrolSim.com
W: www.IncontrolSim.com

● China

A401, Building 3, Zhongli Technology Park, ST3
Shangdi Information Industry Base,
Hai Dian
DIST, Beijing, 100085

T: +86 (0) 10 62 96 4229
E: SimInfo.China@IncontrolSim.com
W: www.EnterpriseDynamic.com

● For a complete list of partner addresses see: www.IncontrolSim.com