

ATHENA₂₀₁₄

The AutoCAD application for design in metal construction and facade engineering

CAD-PLAN GmbH
Frankfurter Straße 59-61
63067 Offenbach, Germany
Tel: +49-69-800818-0
Fax: +49-69-800818-18
info@cad-plan.com
www.cad-plan.com

ATHENA Documentation Edition 28
January 2014

© CAD-PLAN GmbH 1990-2014

All rights reserved

No part of this document may be reproduced in any form (photocopy, microfilm or any other technique) nor processed using electronic systems, duplicated or distributed.

CAD-PLAN GmbH does not give any guarantee regarding suitability or functional capability of the supplied materials and makes these materials available solely in their current form.

CAD-PLAN GmbH cannot in any way be held liable to anyone for particular, collateral, incidental or indirect losses which result from the purchase or use of these materials. In the case of liability on the part of CAD-PLAN GmbH, CAD-PLAN GmbH is exclusively and at the most liable for the reimbursement of the purchase price of the materials described here.

CAD-PLAN GmbH reserves the right to update and modify its products according to its own discretion. This publication describes the state of the product at the time of publication and may not correspond to future versions of the product.

Conditions on the use and permission for the publication of these materials in a language other than German must be requested from CAD-PLAN GmbH. All rights for the translation of this publication are held by CAD-PLAN GmbH, Offenbach, Germany.

All trade names, product names or trade marks are the property of the respective proprietors.

Contents

1	Revision history	3
1.1	Version 4.1 (AutoCAD 12) May 1993	4
1.2	Version 4.2 (AutoCAD 12) July 1994	7
1.3	Version 5.0 (AutoCAD 13) January 1996	10
1.4	Version 5.1 (AutoCAD 13) August 1997	13
1.5	Version 14 (AutoCAD 14) October 1997	20
1.6	Version 14.1 (AutoCAD 14) February 1999	21
1.7	Version 2000 (AutoCAD 2000) July 1999	23
1.8	Version 2000 ARX (AutoCAD 2000(i)) August 2000	24
1.9	Version 2000 ADV (AutoCAD 2000(i)) September 2001	28
1.10	Version 2002 (AutoCAD 2002) October 2001	30
1.11	Version 2003 (AutoCAD 2002) May 2003	31
1.12	Version 2004 (AutoCAD 2004) July 2003	34
1.13	Version 2006 (AutoCAD 2004/2005/2006) July 2005	35
1.14	Version 2007 (AutoCAD 2007) July 2006	39
1.15	Version 2008 (AutoCAD 2004-2009) September 2007	41
1.16	Version 2009 (AutoCAD 2007-2009) October 2008	43
1.17	Version 2010 (AutoCAD 2007-2010) August 2009	45
1.18	Version 2012 (AutoCAD 2010-2012) August 2011	46
1.19	Version 2013 (AutoCAD 2009-2013) August 2012	50
1.20	Version 2014 (AutoCAD 2009-2014) January 2014	52

1 **Revision history**

In this chapter you will find a list of the new features, improvements and changes which have been made in each version of ATHENA.

1.1 Version 4.1 (AutoCAD 12) May 1993

1.1.1 Language Independence

From Version 4.1 ATHENA is independent of the language. To change ATHENA from one language (e.g. German) to another (e.g. English), you only need to exchange the following files

ATHENA.MNU	ATHENA.HLP	LISTEDWG.BAT
ATHENA.RSC	CAD.BAT	FILER.RSC
ACAD.LSP	ABW-ST.TXT	LISTEVER.BAT
ABW-AL.TXT	DIN*.DEF	ACAD.PGP
SYSTEM.VAR	NRM*.DEF	GLASTEXT.TXT

1.1.2 Levels

Decimal places can be set via the field "Decimal places, Numbers" (LUPREC) on the tablet.

The definition level is underlined in order to identify it as such. If the definition level is deleted, then with the next update of the level program, the second level produced is underlined and is therefore defined as the new definition level.

Levels and interrupted dimensions can be moved or extended. The new values are then calculated with the update function. However, they must on no account be copied or mirrored.

If the representation of the level (triangle) is to be changed, then the file KOTE.DWG in AutoCAD must be appropriately changed. This defines the appearance of the levels. IMPORTANT: After changing with the AutoCAD instruction "BASIS", the lower tip (insertion point) of the new triangle is defined and saved.

1.1.3 Thermal insulation

The labeling of the thermal insulation was defective. The error was rectified.

1.1.4 Sheet Development to 2 Sides

The horizontal dimensioning of the created development was doubly present (one under the other). This irregularity was cleared up.

1.1.5 Hatching Programs

The hatching routines were revised. It is now also possible to define an area with a point in it. The scale of the hatching is then requested and can be selected via a side menu. The default setting is <1:1> (applies to DIN A0 or smaller).

1.1.6 Auxiliary Lines

The lengths of the auxiliary lines can from now on be set in the file "C:\ATHENA\ACAD.LSP". The default value is 0.2. A value of 1 corresponds to VSMIN/ VSMAX. Furthermore, they were revised such that also 3D points can be directly selected.

1.1.7 Drawing frame

The font in the captions was changed.

If a drawing frame is loaded, then the LIMITS, LTFactor and DIMFactor are matched to the new size.

The drawing frames can now also be loaded as images (frame margin on the auxiliary line layer). In this respect though, no system settings are converted.

1.1.8 Steel Profile Sections

These are now situated on Layer "0" white. They were previously situated on Layer "2-0" yellow.

1.1.9 Caption Text Program

In the file "C:\ATHENA\ACAD.LSP" you can set whether just the current date or whether also the current time is written, resp. updated in the caption.

1.1.10 DWG END

In the file "C:\ATHENA\ACAD.LSP" you can set whether when saving a drawing, the current date and/or (depending on the setting under Point 9) also the current time is written in the caption, resp. updated.

1.1.11 Problech (When Installed)

Problech starts automatically (start with PRO.BAT) when the environment variable "PRO-ATH" in the file "C:\ATHENA\PRO.BAT" is set (default setting). The command "CONFIG" does not now need to be selected.

The Problech commands can also now be selected in ATHENA via a side menu.

1.1.12 Copy detail

This is a new routine with which details in drawings can be created from certain areas. In addition these can be modified in scale.

1.1.13 Leader Lines (Standard Parts and Thermal Insulation)

The ortho is switched off after the definition of the first point.

1.1.14 Point A Angle

The four orthogonal Point A angles were set straight again (0, 90, 180, 270 degrees). They are now no longer offset by seven degrees.

1.1.15 Blechsch, Blechein, Foil

Default value for the polyline width is reset after the program terminates.

1.1.16 ATHENA Help

ATHENA was extended with online help. This is similar to AutoCAD. The command to activate it is: Select HELP ATHENA on the tablet.

1.1.17 Degrees Symbol

In the DRAW section of the tablet, the degrees symbol (°) is now available.

1.1.18 DIMSTYL

The DIMENSION section of the tablet now includes the command: DIMSTYL, with which various dimension styles can be created and activated.

1.1.19 LOAD PROFILES

After inserting a system profile from the tablet, the selection can be made of whether the article number (file number without extension) is to be inserted. This number is not a constituent part of the block.

1.1.20 DWG-VIEWER

ATHENA is now optionally available with DWG Viewer from ELSA (ELSAview). If this is installed, then with the function key F3 of the Filer, drawings (DWG's) can be viewed without a SLIDE of the desired drawing existing.

In addition the DWG Viewer can be called from the tablet and is available with all its command options.

IMPORTANT:

If the DWG Viewer (if also acquired) is installed - see also the ATHENA Manual - it must be "enabled" to be able to function. This occurs in that the code number displayed on calling the DWG Viewer is notified to ELSA by telephone, the number of which is also displayed. When this is done, you receive the so-called Magic Number which has to be entered. The viewer is then properly installed.

1.2 Version 4.2 (AutoCAD 12) July 1994

1.2.1 Sheet Metal Programs

Sheet metal cross-sections can also now be created "round". Furthermore, existing polylines can be defined based on a sheet outline. The control is implemented via a dialog box. The development programs were also changed (dimensioning and representation of curves).

1.2.2 Structural Analysis Routines

The programs Bending moment and Ix exp. now function via dialog boxes. This has the advantage that with a change of the input values, the new result is available immediately.

1.2.3 Explode

There is a new Explode command with which you can also release mirrored blocks. Also, attributes are deleted if the block to be released contains any.

1.2.4 Membrane

The routine Membrane has been completely revised and now functions via a dialog box. Apart from many other options, it is now also possible, to define a membrane using points with OSNAP. Also, you can produce a membrane from a polyline by offsetting the program centrally or to one side.

1.2.5 Standard parts

The standard parts library has been extended:

Washers:	Plain washer	DIN 9021
Metr. screws:	Oval-head screw	IN 7985
Timber screws:	Timber screw w. oval countersink head	DIN 95
	Timber screw w. half-round head	DIN 96
	Timber screw, countersink	DIN 97
	Timber screw, hex. head	DIN 571
Fischer fixings	All present except:	Internally threaded anchor Hammerset anchor Heavy duty fixing Injection anchor

1.2.6 Window Techniques

It is now possible to generate viewports and to allocate a fixed scale to them. The dimensions are also managed based on the viewport procedure, i.e. the dimensions can only be seen in the window in which they were also produced.

1.2.7 Seals

New programs for creating seals (gaskets and silicone seals). The programs are controlled via dialog boxes.

1.2.8 Group

New routine for "Form groups". (Combines objects without forming a block).

1.2.9 Layer Techniques

New and simplified commands for handling layers: Thaw, Freeze, Lock, Unlock, On, Off. Single objects can also be frozen on the layer.

The layers are all defined in a text file (ASCII) and are therefore easily adapted to your own requirements.

1.2.10 Caption

Different frame sizes (A0-A4) can be combined with different captions. This program can be freely expanded (new captions).

1.2.11 Levels

Whether the horizontal levels are generated in increasing order from left to right or from right to left can now be set. Furthermore, UPDATE takes into account the size of the levels and the decimal places can be permanently set.

1.2.12 3D Capability

All ATHENA commands were converted to 3D capability. It was not possible in Version 4.1, for example, to create thermal insulation correctly in the UCS.

1.2.13 Tilt and Turn

Routine for creating tilt/turn symbols in windows or doors.

1.2.14 Script Generator

This is a tool for executing the same working sequences on a certain selection of drawings. The drawing selections can also span various directories.

Example of a script generator: Plotting a number of drawings automatically overnight. The rotation (0° or 90°) is automatically detected and taken into account.

1.2.15 Hatching

Hatching patterns have been extended. Also, a number of areas can be defined with "Point in the area".

1.2.16 Xname

New program to write block names or attribute values of a block on a leader arrow.

1.2.17 Thermal insulation

Can be defined easier now via dialog box.

1.2.18 Interruption

An interruption definition of the interrupted dimension, which can then be modified as usual, can be created from an existing situation.

1.2.19 Semi-finished products

The semi-finished items (L,U,O,Z sections) can now be more easily generated via dialog box. You can, for example, set which fold radii the sections are to have and whether they are to be shown as pure outlines, hatched or filled.

1.2.20 Dimension Style Management

In a very simple manner it is now possible to create and manage the most varied dimension styles without being specific to a particular drawing.

1.2.21 Offset auxiliary line

New auxiliary line command: An auxiliary line with a defined distance can be created from any edge.

1.2.22 Plot Programs

Six various plotters can now be defined with the ATHENA plot program.

1.2.23 User Friendliness

ATHENA has been designed even more user friendly. All the important basic settings, such as layer, materials, modulus of elasticity for structural analysis programs, hatching patterns for semi-finished items as well as sheets and dimension styles can be set in ASCII files.

1.3 Version 5.0 (AutoCAD 13) January 1996

1.3.1 New Tablet

The tablet overlay has been enlarged, it now contains 56 fields. Furthermore, the position of some command fields and groups has been moved to improve the ergonomics (more frequently used commands are located on the inside and those less frequently used on the outside).

The drawing area (tablet section 3) now contains a large protractor card for degree settings.

1.3.2 Standard parts

The standard parts have been extended to include the Hilti fixings and the aluminum profile sections from Funk.

1.3.3 Glass Dimensioning

There is a new program section with which it is possible to carry out glass calculations with a defined area load. The calculation of the required glass sheet for wind loading is carried out by checking the flexural tensile strength or deflection (comparison with j_{perm} or f_{max}).

Calculation principle: Bach plate formula.

1.3.4 Creating Panels

After the entry of various parameters in a dialog box, the program creates a panel which can then be positioned with an insertion point. Various types of panel can be generated.

1.3.5 Create Mullion and Transom View

After specifying the axis dimension and angle via a dialog box, the program creates a mullion and transom view including center lines. Similarly, various view widths can be defined.

1.3.6 New Command "Break"

With this new routine it is easier to "break up" lines or polylines, because the command does not need to be always restarted. It runs in a loop until it is terminated with ENTER.

1.3.7 New Command "Change Dimension height"

This command is activated with the ?? field for the dimension heights. With this command it is possible to redefine the current dimension height by clicking an existing dimension text. Thereafter, other dimensions can be selected to change the height of their dimension text. Of course, the dimension text can also be defined by a freely selectable numerical entry, as before.

1.3.8 Change to "Auxiliary Lines"

All auxiliary lines have been equipped with automatic object snapping (as on the magnifier).

1.3.9 New Command "Modify Text"

A new dialog box has been created with which a clearly understood modification is possible of one or more text objects. The following properties can be changed

by numerical entry or by pointing: Text height, rotation, width factor, obliqueness, alignment, text style and underlining.

1.3.10 Change to Command "Auxiliary Line Distance"

This routine only functioned in the current UCS. This problem has been rectified so that the function now works in any UCS.

1.3.11 Change to Command "Auxiliary Line Angle"

This routine did not function correctly in 3D. If the desired angle was defined by two points which were not located in the same UCS, then the result was incorrect. This problem has now been rectified.

1.3.12 Change to Command "Plot Script"

The dialog box of this routine now contains an additional field for directly starting the created script file.

1.3.13 Change to the ATHENA Hatching Patterns

These hatching patterns are now also associative, i.e. they also change when the boundary margins or hatching islands are modified.

1.3.14 New Command "ATH_SETUP"

With the aid of this command a dialog box can be activated in which all the default settings of ATHENA can be set (hatch scales, autom. block purging during drawing start, thickness of sheet cross-section, auxiliary line factor, etc.).

1.3.15 Change to "Glass Package"

Hatching of the glass panes is also now associative, i.e. the panes can be modified retrospectively and the hatching also changes with them.

1.3.16 New Command "DDEDIT"

With this command attributes and dimensions, apart from texts, can also be changed via dialog boxes.

1.3.17 Change to "Center-of-Gravity Routines"

The structural analysis routine "Single center of gravity" is omitted, because using the modified routine "Multiple center of gravity", single profile sections can also be calculated.

1.3.18 New Command "Parts Labeling"

All parts, such as for example standard parts, but also user-created parts such as blocks, insulation, foil, seals, sheets, etc., can now be retrospectively labeled. This functions exactly as with the automatic standard-part labeling.

1.3.19 New Block "Plan - Height Figure"

Block for displaying the height (level) in plans (plan views).

1.3.20 Change to the ATHENA Command "Group"

The command "Group" which was already included in Version 4.2 has been expanded to cover the functional features of the group command in AutoCAD 13:

- Groups can now be nested as necessary.
- Blocks can be constituents of groups.
- Objects in a group can be individually edited using grips.

1.4 Version 5.1 (AutoCAD 13) August 1997

1.4.1 New Command "Projection"

A side view can now be displayed of blocks or polylines in any direction with the required length or also interrupted. Visible edges are shown as continuous lines, unseen edges as broken lines. This is particularly of interest with profile sections (e.g. steel beams or aluminum section).

1.4.2 New Command "Unknown Block"

With the exception of blocks, an unknown block can be created from any elements. This routine used to be present in ATHENA 4.21 as the command "Group" (combining elements) and was changed in ATHENA 5.0 such that the elements were no longer combined as an unknown block, but as a group (new AutoCAD 13 command). However, in practice it has been found that slight problems arose with Group in R13 with nesting and its origin (cancellation). The command "Unknown block" has again been made available in ATHENA 5.1.

1.4.3 New Command "Default"

By using this routine an ATHENA or AutoCAD object can be selected, the properties of which are then saved as the default setting (with AutoCAD objects these are the system variables). If the appropriate command is now started, then the current properties are used as the default setting. This command functions with all AutoCAD commands with which objects are created and with all ATHENA commands which operate via dialog box control.

1.4.4 New Command "Modify ATHENA"

ATHENA and AutoCAD objects can be edited. If the relevant object is selected, then the appropriate create routine starts with the default setting of the selected object. Here, the individual values can be changed and the object is then regenerated.

Example: Changing a metric screw from the nominal size of M8 to M10 or the length of 25 mm to 35 mm. A different screw can also be selected.

The following AutoCAD objects can be edited:

- Attributes
- Dimension text
- Hatching
- Text

The following ATHENA objects can be edited:

- Interrupted dimension
- Levels
- Sheet metal section
- Standard parts
- Facade elevation
- Panel
- Leader
- Welding Symbol
- Membrane
- Tables
- Semi-finished products
- Thermal insulation

Furthermore, this routine is also used for editing and supplementing dimension texts. A prefix (preceding) and suffix (following), originating from a stock of values (ASCII file), can be allocated to the routine.

This may for example include: External dimension, internal dimension, on-site measurement, etc. The stock of values can be freely supplemented.

<Prefix> <Dimension figure> <Suffix>

Example: You would like to precede a dimension text with the text "external dimension". You can do this with the command "Prefix" and by selecting the desired text (external dimension).

1.4.5 New Command "Standard parts"

Standard parts, which are generated as "Non-DIN parts" (e.g. with a freely defined excess length), are identified in the labeling with a "*" after the size designation, e.g. "M8x200*". Standard parts which can only be used with restrictions are provided with brackets analogous to the DIN tables, e.g. "(M5x30)". Steel profiles are shown with hole center lines.

The following standard parts have been integrated anew:

DIN 127 A	Spring washer A
DIN 127 B	Spring washer B
DIN 436	Square washer
DIN 440 R	Washer
DIN 440 V	Washer
DIN 6902 A	Washer for multi-purpose screw
DIN 6902 B	Washer for multi-purpose screw
DIN 6903 A	Washer for sheet screw assembly
DIN 6903 B	Washer for sheet screw assembly
DIN 6904	Spring washer for multi-purpose screw
DIN 917	Hexagon cap nut, low
DIN 7971 F	Cheese head sheet screw with slot, Form F
DIN 7972 F	Countersunk sheet screw with slot, Form F
DIN 7973 F	Oval-head countersunk sheet screw with slot, Form F
DIN 7981 F	Oval-head sheet screw with crossed slot, Form F
DIN 7982 F	Countersunk sheet screw with crossed slot, Form F
DIN 7983 F	Oval-head countersunk sheet screw with crossed slot,
DIN 79xx Z	Form F
DIN 7976	Cheese head sheet screw, socket-head (Schüco)
DIN 6901 C	Hexagon sheet screw (Schüco)
DIN 660 A	Sheet screw assembly (Schüco)
DIN 660 B	Half-round rivet, set-head, half-round
DIN 661 A	Half-round rivet, set-head, countersunk
DIN 661 B	Countersunk rivet, set-head, half-round
DIN 124 A	Countersunk rivet, set-head, countersunk
DIN 124 B	Half-round rivet, set-head, half-round
DIN 302 A	Half-round rivet, set-head, countersunk
DIN 302 B	Countersunk rivet, set-head, half-round
DIN 1025 Tx	Countersunk rivet, set-head, countersunk
DIN 1027	UPE beam
DIN 1025 H1	Round-edged Z-section
DIN 1025 H2	I-beam, halved
DIN 1025 H3	IPB-beam, halved
DIN 1025 H4	IPBI-beam, halved
DIN 1025 H5	IPBv-beam, halved
DIN 2458 MSH	IPE-beam, halved
DIN 59410 MSH	Round welded steel tube (Mannesmann)
DIN 59410 MSHR	Steel construction hollow section, square
DIN 59410 MSHW	(Mannesmann)
DIN xxxx	Steel construction hollow section, rectangular
Fischer fixings	(Mannesmann)
	Steel construction hollow section, squ. hot pressed
	(Mannesmann)
	Titgemeyer blind rivet nut
	have been supplemented

1.4.6 New Command "Welding Symbols"

Welding symbols can now be inserted as legends to leader arrows into the drawing as required by standards. The program has a very clearly arranged and extensive dialog box in which types of welded seams (e.g. edge-formed joint, Y-joint, spot-weld, etc., total 33 types), the viewed side, opposite side, site seam, all around seam, reference, cross-sectional dimension, longitudinal dimension and welding processes can be defined.

1.4.7 New Command "Count Parts"

With this routine it is possible to search a drawing for attributes or text whereby the search pattern (or a number of them) can be specified. The single quantity and the total quantity are output from each search pattern to a table on the drawing. It is therefore possible, for example, to determine relatively easily the quantities of the individual positions in the layout. The table can then be output as an Excel or ASCII file.

1.4.8 New Command "Table"

Text files (ASCII) can be read into AutoCAD (incl. the update function), whereby the header lines, column length and width, etc. can be defined using a dialog box. The text lines are generated in table form with lines (outline, columns and rows). Furthermore, tables (texts) can be read out of AutoCAD and saved as files (Excel, Dbase or ASCII).

1.4.9 New Command "Structural Analysis"

New routine for computing the deflection and I_x required for profiles. Fourteen loading cases have been predefined. These can be defined in a clearly laid-out dialog box using SLIDES. The routine replaces the two old programs "Deflection" and " I_x required".

Loading cases:

- Rigidly mounted beam with single load.
- Rigidly mounted beam with linear load.
- Beam on two supports with single load.
- Beam on two supports with symmetrical single load.
- Beam on two supports with linear load.
- Beam on two supports with symmetrical triangular load.
- Beam on two supports with symmetrical trapezoidal load.
- Single rigidly mounted beam with single load.
- Single rigidly mounted beam with linear load.
- Double rigidly mounted beam with single load.
- Double rigidly mounted beam with symmetrical single load.
- Double rigidly mounted beam with linear load.
- Double rigidly mounted beam with triangular load.
- Double rigidly mounted beam with trapezoidal load.

1.4.10 New Command "Load Text Styles"

This routine uses a dialog box and enables the loading or setting of text styles. The text styles visible in the dialog box are defined in the ASCII file "TXT_STYL.DEF" with the corresponding properties (style name, file name, text height, width factor and rotated angle). This means that it is possible to define your own text styles for ATHENA relatively easily. On creating a new drawing, all the text styles are automatically loaded.

1.4.11 New command "WBlock Text Frame"

This routine is used for the quick production of WBlocks with automatic selection of the objects and name allocation by selecting a text. The objects which are to be constituents of the WBlock, must be located within a boundary consisting of lines or polylines.

This procedure is primarily used for the XREF technique where all XREF originals are located in one drawing for a better overview and are also edited there. This routine then enables quick production of the WBlocks.

1.4.12 New Command "Block Manager"

This is used for managing WBlocks. These can be located in various paths and combined with the aid of a data base to form libraries. Furthermore, each block can be supplemented with a remark which can also be used for searching. The block selection can be carried out graphically (preview) or via filenames.

Functional features:

- Create library.
- Rename library.
- Delete library.
- Insert block into library.
- Delete block in library.
- Find (according to file name or remark).
- Insert as block.
- Insert as XREF.
- Open as drawing.

1.4.13 Change to Command "Filer"

The DOS Filer has not been changed. The following points refer to the filer oriented to a dialog box:

- The filer now skips with the cursor to the last edited drawing when called.
- A selection mask is now definable, e.g. on entering "100*", only the drawings are displayed which have a file name beginning with "100".
- The window for the graphical preview has been enlarged.
- The automatic preview can now be switched off and the field "Show preview" has been integrated and using this, drawings can be displayed as previews when required. It only functions when automatic preview is deactivated.
- The directory and file names can now also contain umlauts and spaces (only under Windows 95/NT).

1.4.14 Change to Command "Slotted Hole"

The slotted hole is combined after generation with the center line as a group (unknown block) and can now be labeled as required (analogous to standard parts). Retrospective labeling with the routine "Label parts" is also possible.

1.4.15 Change to Command "Foil"

If the foil is now labeled with the routine "Label parts", the label now also includes the foil length.

Foil 2.0/1738

1.4.16 Change to Command "Limit Lines (OSNAP)"

A polyline is now also permissible (previously only lines) as limit line.

1.4.17 Change to "Plot Routines (PLOT-01 - PLOT-06)"

At the start and end of the routines switchover to the graphics screen always takes place. The tiresome pressing of F1 after plotting is now no longer needed.

1.4.18 Change to Command "ATHENA Insert"

If a block, which is already present under the same name in the drawing, is loaded with this routine, a query (dialog box) appears in which you can enter whether the block in the drawing is to be updated (analogous to _DDINSERT).

1.4.19 Change to the Commands "Layer Handling (Freeze, Switch Off and Block Layer)"

"All except" is now also possible as object selection (layer selection). With this, all layers except the selected one are picked and then frozen/switched off or blocked.

1.4.20 Change to Command "Auxiliary Lines"

The auxiliary lines "Ray end" and "Ray infinite" now switch back to the old layer after usage.

1.4.21 Change to Command "Levels and Interrupted Dimension"

If, during the creation of levels or interrupted dimensions, the corresponding routine is canceled, then the levels or dimensions generated are retained and are not completely deleted as with the last ATHENA version. Furthermore, the levels are also recalculated with the Interr. dimension of the option "Update".

1.4.22 Change to Command "Thermal Insulation"

In addition, the possibility has been provided of placing thermal insulation mats (layers) in any thickness and alignment in a free outline. Outline selection then occurs analogous to hatching with selection of a point in the area. Furthermore, the display width of the insulation can be defined with four different width factors (0.5/0.6/0.8/1.0).

1.4.23 Change to Command "Plot Script"

In addition to the old functional features (plotting), script and LISP files can be executed. A LISP routine for printing out drawing lists is given as an example.

Furthermore, batch printing via Windows with autospool is now also supported.

1.4.24 Change to Command "Parts Labeling"

Standard parts are now labeled retrospectively with short text exactly as when created.

With foil the length is also given (see also section 2.3).

1.4.25 Change to Command "Save WBlock"

This routine now functions via a dialog box similar to the AutoCAD command WBlock.

1.4.26 Change to Command "Hatching"

The last used hatching can be called up again with the old parameters using ENTER.

1.4.27 Change to Command "Facade Elevation"

The number of mullions and transoms in the dialog box entry is no longer limited (previously 10 off each).

1.4.28 Change to Command "Insert System Profiles (e.g. Schüco)"

If, on inserting the profile, the query "Insert designation Yes/<No>:" is answered with "Yes", then "Yes" is present as the default for the next insertion. The last selected response is used as default the next time.

1.4.29 Change to Command "Tilt/turn Symbol"

The automatic snap option on the diagonal corner points has now been set to "intersection" and "endpoint". "Intersection" has the higher priority.

1.4.30 Change to Command "Leader Label"

The leader label can now be multiline. Furthermore, the AutoCAD system variable "DIMBLK" is read out and used as the dimension block. The leader then uses, for example with the dimension style set to "Point", the dimension block Point.

1.4.31 Change to Command "Caption"

The graphical caption display in the dialog box no longer needs SLIDE files (*.SLD). The DWG files are displayed directly. Furthermore, up to 12 captions can be managed.

1.4.32 Change to Command "Panel"

After panel generation, an unknown block (group) is generated from it which simplifies the further treatment (only one part).

1.4.33 Change to Command "Silicone Seal"

The display (ratio of length to width for cross-section) of the silicone seal has been changed according to the guidelines for facade construction.

1.4.34 Change to Command "Center of Gravity of Single and Combined Profiles"

The text output of the structural analysis values (generally two decimal places) occurs on the drawing in tabular form (with row and column lines). This table can be saved with the function "Table" as a file in various formats (see also section 1.8).

1.5 Version 14 (AutoCAD 14) October 1997

1.5.1 Change to Tablet

The ATHENA tablet overlay has been supplemented by the necessary AutoCAD commands.

1.5.2 Conversion of the ATHENA 5.1 Commands for AutoCAD 14

ATHENA 5.1 has been completely revised in order to ensure the optimum functional capability of the resulting version of ATHENA 14 under AutoCAD 14.

1.6 Version 14.1 (AutoCAD 14) February 1999

1.6.1 Year 2000 Compatibility (Y2K)

ATHENA is now Year 2000 compatible, i.e. all routines which operate with the date now use the 4-figure date.

1.6.2 Toolbar (Icons)

Apart from the tablet, this version can now only be operated with the mouse and the toolbar (icons). For this however, AutoCAD 14.01 is needed. Furthermore, all programs have been revised for this method of operation. This involved various system variables (e.g. Filodia or Object-snaps) which are each switched as required by the program. Of course, this must not occur when working with the mouse, because default settings are mainly used which must not be changed.

1.6.3 Change to Command "Modify ATHENA"

Lines can now also be inserted when editing the text of leader lines.

1.6.4 Change to Standard Parts "Rivet"

The clamping length of rivets can now be defined in the dialog box.

1.6.5 Change to Standard Parts "Rolled Steel Profiles"

The steel beams can now also be shown with hole center lines. A button has been integrated into the dialog box for this. Default: No hole center line. Furthermore, the radii of steel tubes can be defined within a specified range because these may be different from manufacturer to manufacturer. Default: Largest radius.

1.6.6 Change to Standard Parts "Sheet Screws"

The Schüco facade screw has been supplemented in the available lengths. The Raico facade screw has now been included.

1.6.7 Change to Standard Parts "Fixtures (Halfen Channels and Screws)"

Halfen channels and screws have been revised.

1.6.8 Change to Standard Parts "Funk Profiles / Spaeter Profiles"

Funk profiles have been removed, because they are no longer available. They have instead been replaced by Spaeter profiles.

1.6.9 Change to command "Semi-finished items"

The semi-finished items can now be labeled during production or retrospectively and automatically with the leader (similar to standard parts). Furthermore, T-profiles and flat bars have been included.

1.6.10 AutoCAD Bonus Tools

The AutoCAD Bonus Tools can now also be used in the ATHENA. However, they must be installed for this.

1.6.11 Change to Command "Complete Caption"

The file name is now always inserted into the caption in uppercase letters.

1.6.12 Change to Layer Switching on Using Dimension Commands

If a dimension command is used, the program switches automatically to the dimension layer. A new feature is that after termination of the dimension command, you are switched back to the original layer.

1.6.13 Change to Command "Projection"

Now also "round" cross-sections (also circles) and parts which have tangential transitions (e.g. sheet cross-sections with certain edge angles) can be projected.

1.6.14 Change to Command "Load Text Styles"

The Windows True-Type fonts can now also be used.

1.6.15 Change to Command "Auxiliary Line Perpendicular"

Draws an auxiliary line perpendicular to an existing line/polyline which may also be nested in blocks.

1.6.16 Change to "Drawing Frame"

In the drawing frames the current path incl. drawing name can, if required (can be set via ATHENA setup), be written or updated to the right below the caption. This occurs either via the command "COMPLETE CAPTION" or when saving with the command "DWG END".

1.6.17 Change to Command "Load Profiles"

Along with the earlier method, profiles (e.g. Schüco) can now also be loaded by direct entry of the number.

1.6.18 Change to Command "Glass Dimensioning"

The routine name and display have been changed since according to new guidelines in metal construction, this computation is no longer applicable to glass panes. The routine is now called "Panel/solid thickness" and is used for general thickness computation of solid figures according to Bach's plate formula.

1.7 Version 2000 (AutoCAD 2000) July 1999

1.7.1 "MDI (Multiple Document Interface) Capability"

It is now possible to open a number of drawings simultaneously in ATHENA.

1.7.2 New Command "Auxiliary Line on Object"

Draws an auxiliary line without separation through an object.

1.7.3 New Command "Decimal Places for Linear Dimensioning"

Sets the number of decimal places for linear dimensioning via a context menu.

1.7.4 New Command "Decimal Places for Angular Dimensioning"

Sets the number of decimal places for angular dimensioning via a context menu.

1.7.5 Change to Command "Interrupted Dimension"

The definition and setting of interrupted dimensions is now possible without prior text selection.

1.7.6 Change to Command "Horizontal and Vertical Levels"

The definition and setting of horizontal and vertical levels is now possible without prior text selection.

1.7.7 Change to Command "Parts count"

The dialog box for the routine has been completely revised to enable faster counting.

It is also now possible to accept blocks and attributes by selection in the search-pattern field in order to define search patterns.

1.7.8 Change to Standard Parts "Rolled Steel Profiles"

The rolled steel profiles have been supplemented by four British standards (E6010 Channel, E6011 Joist, E6012 Universal Beam and E6013 Universal Column).

1.7.9 Change to "Plot Routines (PLOT-01 to PLOT-06)"

With ATHENA it is now possible to print in 3D and to hide lines (e.g. of 3D objects).

1.7.10 Change to Tablet

The ATHENA tablet overlay has been supplemented by new AutoCAD 2000 commands.

1.8 Version 2000 ARX (AutoCAD 2000(i)) August 2000

ARX Technology

ATHENA 2000 ARX is completely integrated into AutoCAD via the Object ARX interface. ATHENA objects can be modified with this new technology by the use of AutoCAD commands. This means that you can modify ATHENA objects with grips or with the Stretch command.

1.8.1 Change to the Command "Sheet Metal Section"

The sheet metal section is now an ARX object. The grips of the sheet metal section are arranged as stated during creation by the relevant option. This means that the sheet metal section can be optimally matched if the adjacent construction has been changed.

The dialog box has been adapted to the new requirements of the sheet cross-section and the hatching options (material) have been expanded.

1.8.2 Change to the Command "Foil"

The foil is now an ARX object. The grips of the foil are arranged as was stated during creation by the relevant option. This means that the foil can be optimally matched if the adjacent construction has been changed.

The dialog box has been adapted to the new requirements of the foil and extended with hatching options (material).

1.8.3 Change to the Command "Thermal Insulation"

The thermal insulation is now an ARX object. Each thermal insulation can be changed to an irregular surface by stretching.

The dialog box has been revised and adapted to the new requirements of the thermal insulation.

1.8.4 Change to the Command "Silicone Seal"

The silicone seal is now an ARX object. There is now the additional possibility of creating V-shaped silicone seals by selecting two lines.

The dialog box (properties) has been adapted to the new requirements of the silicone seal and extended with hatching options (material).

1.8.5 Change to the Commands "Gasket" and "Reinforcing plate"

Gasket and reinforcing plate are now ARX objects which can be changed with grips or by stretching.

The dialog box (properties) has been adapted to the new requirements of the objects and extended with hatching options (material).

1.8.6 Change to the Command "Semi-finished items"

Semi-finished items are now ARX objects.

To speed up the insertion of semi-finished items, the part labeling in the commands has been removed. Retrospective labeling of semi-finished items is possible as before.

Three new semi-finished items have been integrated; these are:

- Double T-section
- Round bar
- Round tube

The dialog box has been adapted to the new requirements of the semi-finished items and extended with hatching options (material). Selection of the semi-finished items now occurs via images. Furthermore, center lines can alternatively be switched on or off and the type of part labeling can be changed.

1.8.7 Change to the Command "Standard Parts"

Standard parts are now ARX objects. If a part (e.g. a screw) is inserted in a standard length, then it can only be stretched to the standard lengths (steps) which are dependent on the standard and nominal size of the screw. If non-standard lengths are needed, then the tick box Standard length can be deactivated to enable the insertion of any lengths.

To speed up the insertion of standard parts, the part labeling in the command has been removed. Retrospective labeling of standard parts is possible as before.

The dialog box has been revised and adapted to the new requirements of the standard parts. Selection of the standard parts now occurs via images or pick lists. Center lines can alternatively be switched on or off and the type of part labeling can be changed. The standards have been updated - apart from DIN, ISO and EN (if present) are available.

The following parts are available new or in the latest version:

- Bar steel (new).
- Standard aluminum profile sections (new).
- Nails (new).
- Funk profile sections (new).
- Hilti fixings (latest version).
- Fischer fixings (latest version).

1.8.8 Change to Commands "Leader" and "Label Parts"

Part leaders and labels are now ARX objects.

If leaders are changed by stretching or with grips, the leader arrow is automatically matched to the new direction.

If parts are stretched, the value on the corresponding leader arrow is updated automatically after release.

The dialog box for the leader has been adapted to the new requirements.

1.8.9 Change to the Command "Panel"

The panel is no longer a dedicated object. It is formed from the ARX objects sheet metal section, thermal insulation and block. Hence, the sheet metal section can be stretched as one or the individual constituents (e.g. internal sheet thickness) can be changed.

The dialog box for the panel routine has been revised. The preview has been enlarged and the panel can be optionally inserted with complete dimensioning. In order to change individual panel constituent parts, the appropriate dialog box (e.g. thermal insulation) is opened via a button and the settings can be entered in it.

1.8.10 Change to the Command "Welding Symbol"

The welding symbol is now an ARX object.

If welding symbols are changed by stretching or with grips, the leader arrow is automatically matched to the new direction.

If a welded seam is selected with the command Label parts, the welding symbol

dialog box opens and you can give the welded seam the appropriate welding symbol.

1.8.11 Change to the Command "Slotted Hole"

The slotted hole is now an ARX object.

The dimensions of the slotted hole are entered in a dialog box. Center lines of the slotted hole can be alternatively activated or deactivated.

1.8.12 Change to the Command (OSnap) "New Point"

The object snap New Point has been replaced on the tablet by the original AutoCAD command Snap from point (_from). It is only available as an icon in the toolbar Drawing aids. The command is now transparent to other ATHENA commands.

1.8.13 Change to the Command (OSnap) "Center of"

Instead of two lines, you now have the possibility of selecting two points with the normal object snap. The command is now transparent to other ATHENA commands.

1.8.14 Change to the Command "Deflection/Moment of Inertia"

The dialog box for this command has been revised and extended. The individual values can be allocated comments. Geometrical and loading/material values are entered in sub-dialog boxes. The computation can be inserted into the drawing as a block with attributes - optionally with the image of the corresponding loading case. You can change values and recalculate them with the command Modify ATHENA.

1.8.15 New Command "Welded Seam"

This draws a welded seam. The welded seam is an ARX object which can be modified with grips or the AutoCAD command Stretch. The form of the welded seam can be set in a dialog box.

1.8.16 New Command "Join"

Using this command, two ARX objects (sheet cross-section, foil or welded seam) can be combined to form one ARX object. If the selected objects possess different properties, the properties of the object first selected can be accepted or alternatively, a new object can be selected.

1.8.17 New Command "ATHENA update dimensions"

With this command leaders, dimensions, interrupted dimensions and levels can be updated when properties, such as for example the dimension height, have been changed. At the same time, the interrupted dimensions and the levels are recalculated.

1.8.18 New Command "Bind, Insert XRefs"

With this command all XRefs can be bound and inserted into a drawing. In contrast to the AutoCAD command, no dialog box is required here, so that you can integrate the command into a script.

1.8.19 New hatching patterns "Wood" and "Gravel"

New hatching patterns are available in ATHENA for wood and gravel.

1.8.20 ATHENA Online Help

The ATHENA online help is now available in any command. By entering a ? during the command execution, the online help for the corresponding chapter is activated.

1.8.21 Change to Tablet

The tablet overlay has been changed in the sections USER, HATCHING/TEXTURE, BLOCK/ATTRIBUTE, STANDARD PARTS, DRAW and CHANGE.

1.8.22 New Icons

New icons are provided in the various toolbars for all the new commands.

1.9 Version 2000 ADV (AutoCAD 2000(i)) September 2001

1.9.1 Change to the Command "Glass dimensioning"

The routine has been completely revised and therefore also renamed as Infill. A dialog box is now provided in which you can make all the required settings. After quitting the dialog box, you can dimension any number of infills. If required, the designation of the infills can occur with incremental numbering.

1.9.2 Change to the Command "Thermal Insulation"

With the option Thermal insulation in the area it is now possible to select objects. In addition, the labeling of the thermal insulation can be adapted analogously to the labeling of standard parts.

1.9.3 Change to the Command "Script"

With the creation of a script you now have the possibility of selecting a number of files simultaneously with the mouse while the "Shift" or "Ctrl" key is held down.

1.9.4 Change to the Command "Peripheral dimensioning"

In addition to complete arcs, you can now dimension arc segments. The functioning principle is similar to angle dimensioning.

1.9.5 Change to the Command "Defining and setting interrupted dimensions"

The command repetition of the options has been simplified.

1.9.6 Change to the Command "Modify ATHENA" with parts labeling.

The labeling of the standard parts can be supplemented or modified with this command without the references to the parts being lost.

1.9.7 Change to the Command "Insert drawing frame"

The dialog box for inserting drawing frames has been revised. You specify the scale of the frame before insertion into the dialog box. Furthermore, you can also integrate any number of your own drawing frames.

1.9.8 New Command "Position symbols"

Routine with which you can provide parts with a position label. The parts positioning occurs alternatively with leaders or with symbols and, if required, with incremental numbering.

1.9.9 New Command "Adjust ATHENA properties"

Routine for transferring properties from one ATHENA object to another ATHENA object. Functioning principle similar to the AutoCAD command matchprop.

1.9.10 New Command "Object dimensioning"

Automatic dimensioning of objects. The dimensioning options can be set up in a dialog box.

1.9.11 New Command "Save / insert intermediate block"

This command represents an extension of the clipboard. You can very quickly save and insert an "intermediate block" in the temporary folder of your computer. In contrast to the clipboard, XRefs can also be contained in the intermediate block. Furthermore, the intermediate block is not lost when the computer is switched off.

1.9.12 New Command Thermal resistance

With this command you can determine the thermal resistance of components. The components may be composed of any layers. All components are saved in a catalog which can be extended as required. You can enter or select the thermal parameters very easily in a dialog box.

1.9.13 New Command ATHENA 3D

A 3D functional section has been included in ATHENA. The 3D functional section includes 16 new commands. You can now integrate and extrude any profile sections in ATHENA. The sections and joints are automatically generated. Infills can be employed in the 3D construction. All parts can be arranged in an order or part order. Diagrams and parts lists are automatically generated.

List of commands:

- Assembly (component)
- Infill
- Cutting
- Bar orientation
- Edit infill
- Display modes
- Bar list
- Infill list
- Positions
- Bar diagram
- Infill diagram
- Section
- Assembly library
- Infill library
- UCS objects
- Construction aids

1.9.14 Modification of Tablet Overlay

The tablet overlay has been revised in the sections 3D, BLOCK/ATTRIBUTE, DIMENSION, SETUP and PROGRAM.

1.9.15 New Icons

New icons are provided in the various toolbars for all the new commands. A new toolbar has been created for the 3D functions. Furthermore, the normal working toolbars have been adapted.

1.10 Version 2002 (AutoCAD 2002) October 2001

1.10.1 Modification of Tablet Overlay

The tablet overlay has been supplemented with the required AutoCAD 2002 commands.

1.10.2 General Adaptations

ATHENA has been revised for use under AutoCAD 2002.

1.11 Version 2003 (AutoCAD 2002) May 2003

1.11.1 Expanded ATHENA options

You have the possibility of changing languages during the program run time. Furthermore, ATHENA offers you the possibility of managing the properties and assignments of layers and materials in clearly laid-out dialog boxes.

1.11.2 Extended labeling function

For most objects you can save and manage the most frequently used labeling notes and output them on the leader as prefixes or suffixes. Example of soft thermal insulation: mineral wool, rock wool, glass wool, manufacturer's name, etc.

1.11.3 Item assignment

You can save item numbers for most objects. These may be either part numbers (e.g. with standard parts) or procedure or process numbers (e.g. with a welded seam).

1.11.4 Layer assignment

For most objects you can change the layer before it is generated. This saves retrospective modification of the layer.

1.11.5 Hatch pattern assignment

For most objects you can change the hatching properties before generation. In addition, you can create standard profile sections with hatching.

1.11.6 Dimension Units

You can now work with metric (mm) or imperial (inch) settings in ATHENA.

1.11.7 New Function Hole

You can create holes, threaded holes and slotted holes with this routine. These can be provided with standardized counterbores as required.

1.11.8 New Function Thermal analysis (flixoAT)

With this integrated light version of the flixo software, you have the possibility of carrying out a thermal computation on your detail. The areas of the selected outline are analyzed directly in ATHENA, known materials are recognized and unknown ones can be defined. After the computation flixoAT transfers the temperature variations to the current drawing.

1.11.9 New Function Window sill

With this function you can create a window sill section using a clearly laid-out dialog box.

1.11.10 New Function Slice objects

With this command you can slice most ATHENA and AutoCAD objects along a selected line.

1.11.11 New Function Break objects

With this command you can break most ATHENA and AutoCAD objects at any point.

1.11.12 New Function Objects to polylines

You can convert line objects to polylines with this function.

1.11.13 New Function Optimize objects

You can remove double lines with the function and repair overlapping line segments or continued lines.

1.11.14 New Function Convert text

You can convert existing text in the drawing into polylines, splines, regions or 3D solids.

1.11.15 New Function Save multi-language text

You can save text contents in a number of languages and display the text in another language where required.

1.11.16 New Function Co-ordinate dimensioning

With this function you can create incremented absolute dimensioning with arrows starting from a specified reference point.

1.11.17 New Function Arrange viewports

With this function you can create aligned viewports with scale specification in the layout section.

1.11.18 New Function Element elevation

With this function you can create the elevation of a window or door element. The parameter definition occurs in a dialog box with dynamic preview.

1.11.19 New Function Copy 3D cuttings

With this function you transfer the cutting properties of a node to another node.

1.11.20 New Function Slice 3D bars

With this function you slice a bar on a specified plane.

1.11.21 Expanded Function Projection

You can now project objects along a path.

1.11.22 Expanded Function Glass package

You can manage glazing comfortably in a dialog box and insert it as required.

1.11.23 Expanded Function Facade elevation

You can modify the profile layer and have a dynamic preview in the dialog box.

1.11.24 Expanded Functions Interrupted dimension

The interrupted dimensioning is associative. The options have been simplified

1.11.25 Expanded Functions Levels

The levels are associative.

1.11.26 Expanded Function Standard parts

The standard parts library has been extended by about 50 standard and manufactured parts. In addition, a dynamic parts preview has been integrated.

1.11.27 Expanded Function Insulation

You can leave out the insulation around "islands".

1.11.28 Expanded Function Infills

The development of box panels has been integrated.

1.11.29 Expansion of drawing frames and text boxes

The drawing frames and text boxes integrated into ATHENA 2014 contain multi-language texts. You can set another text language with the command Text language.

1.11.30 Expanded Function 3D display modes

You can optionally activate grips and OSnap for bars and infills. Furthermore, you can change between the edit and display modes.

1.12 Version 2004 (AutoCAD 2004) July 2003

1.12.1 General Adaptations

ATHENA has been revised for use under AutoCAD 2004.

1.12.2 New Commands Export and Import Items Standard Parts

With these commands you can export groups of standard parts to Excel to enter your own item numbers. Then you import the groups of standard parts including item numbers again into ATHENA.

1.12.3 Modification of Tablet Overlay

The tablet overlay has been supplemented with new AutoCAD 2004 commands.

1.13 Version 2006 (AutoCAD 2004/2005/2006) July 2005

1.13.1 Menus, toolbars, tablet overlay

New AutoCAD and ATHENA commands were supplemented.

1.13.2 Assembly library

There is only one library format (*.olb) for all assemblies. The following assemblies can be saved as libraries: Screwed joints, 2D and 3D infills, 3D bars.

1.13.3 Peripheral dimension

The peripheral dimensioning is associatively linked to the dimensioned object.

1.13.4 Manage dimension styles

Dimensioning styles are now saved in the file ath_dim.dex. The former *.dim ASCII files are no longer required. Dimensioning styles can be generated with the AutoCAD dimensioning style manager and integrated into ath_dim.dex.

1.13.5 Manage system variables

System variables are now saved in the file ath_sysvar.dex. The former ASCII file system.var is not required.

1.13.6 Manage text styles

Text styles are now saved in the file ath_txt.dex. The former ASCII file ath_stil.def is not required. Text styles can be generated with the AutoCAD command Text style and integrated into ath_txt.dex.

1.13.7 Leader

Language selection is possible. Furthermore, import from the messenger is possible.

1.13.8 Sheet metal section

Composite sheets (e.g. Alucobond) can be created.

1.13.9 Sheet processing (New)

A new, very extensive program with which sheets (folds, joints, punch-outs) can be defined and inserted into the drawing as a section, 3D object or development. Furthermore, DXF output is possible.

1.13.10 Profiled sheet (New)

A new routine for creating corrugated and trapezoidal sheets from various manufacturers.

1.13.11 Center of gravity and moments

The results of the calculation have been extended by the center of gravity and other area and outline values.

1.13.12 Ix Required/Deflection/Collapsing stress

The program has been extended by four new loading cases (Euler) for the calculation of supports.

1.13.13 Thermal analysis

The contour check and transfer to flixoAT have been substantially improved and a new flixoAT version has been integrated.

1.13.14 Ucw value for a facade (New)

A new routine with which you can calculate average thermal transmission coefficients of facades and windows.

1.13.15 Rw value computation (New)

A new routine for the rough determination of the sound insulation quantities of constructions.

1.13.16 Infill

The completely revised dialog box enables panels and infills to be defined with various forms (box panel, stepped glass panes, ...). Furthermore, specific settings for the edge seal and for the coating of layers, etc. can be carried out.

1.13.17 Create script

This dialog box has been completely revised. Various operations in drawings (e.g. reading out caption attributes), optionally followed by plotting, are possible.

1.13.18 ATHENA Filer

The filer will not be supported from this version onwards.

1.13.19 Deactivate ATHENA objects, Activate ATHENA objects (New)

Using these two new commands you can deactivate all ATHENA ARX objects contained in the drawing (convert them to U blocks) and activate them again.

1.13.20 Adjust plot script files (New)

From now on you can adapt the plot script files (plot*.scr) conveniently in a dialog box.

1.13.21 Stretch to dimension (New)

New routine for stretching. The distance is determined by changing a dimension.

1.13.22 Convert ellipse (New)

This routine converts "genuine" AutoCAD ellipses into approximated polylines.

1.13.23 Punch objects (New)

You can punch contours with this command.

1.13.24 Hide objects, Cancel object covering (New)

With this command you can cover one ATHENA object with another. This is particularly important for screwed joints.

1.13.25 Insert WBlock (New)

Command for inserting blocks With the extended options you can conveniently align the block already during the insertion process.

1.13.26 Insert drawing frame, Complete caption

Now you can exchange drawing frames with the command Modify ATHENA.

1.13.27 Read out caption (New)

The attributes of the caption are written to the clipboard and can be pasted into a drawing list.

1.13.28 Dihedral angle (New)

Using this command you can dimension the angle between two surfaces in space.

1.13.29 Semi-finished product

The command has been extended with three new variants. Furthermore, you can change the edge properties of semi-finished items.

1.13.30 Standard Part

In the new version you can filter standard parts according to regions (areas). Additionally, many new standard parts have been integrated.

1.13.31 Screwed joint (New)

You can create, edit and save screwed joints with this routine.

1.13.32 Insulation

You can now also create hatched insulation. In addition a dynamic preview has been integrated into the dialog box.

1.13.33 Membrane

A dynamic preview has been integrated into the dialog box.

1.13.34 Seal

Sealing is generated without back-filler. The dialog box now includes a dynamic preview.

1.13.35 Gasket, Spacer

The dialog box now includes a dynamic preview.

1.13.36 Welded seam

Further options for generating the welded seam are available. The dialog box now includes a dynamic preview.

1.13.37 Edge symbol, Surface symbol (New)

With this routine you can create symbols to label workpiece edges and surfaces.

1.13.38 Manage text styles

The text styles are now saved in the file ath_txt.dex. The former ASCII file ath_stil.def is not required.

1.13.39 Drilled hole

The presentation of the threaded holes has been improved (three-quarter circle). You can freely define counterbores.

1.13.40 Arrange viewports

The layout can be selected in a dialog box. The distance between the viewports is adjustable and optionally dividing lines can be drawn.

1.13.41 Isolate bar

A new command with which you can extract a bar from a construction without losing the cutting properties of the bar.

1.13.42 Bar Assembly Manager

ATHENA objects (e.g. standard parts) can be directly integrated into assemblies.

1.13.43 Infill manager

Box panels are now also possible in the 3D section.

1.13.44 Auxiliary construction

New types of construction have been added. Slopes can be quoted in percent or degrees.

1.14 Version 2007 (AutoCAD 2007) July 2006

The innovations and changes listed here are also available in the version ATHENA 2006 from Serice Pack c2 onwards.

1.14.1 Purge layer definition (new)

Command for purging unreferenced system or material layer definitions.

1.14.2 Cutting (new)

Command for creating and managing types of cutting which can be assigned to the 3D assemblies.

1.14.3 Display (new)

With this command you control the colors of the objects in the dynamic previews of the dialog boxes.

1.14.4 Double click (new)

This inserts an axis symbol which simplifies the positioning of glazing.

1.14.5 Assembly library

You can now open a number of assemblies and also close the assemblies.

1.14.6 Assembly catalog (new)

In the Dialog box Assembly catalog you have access to the assemblies which have been brought together in the Dialog box Design environment.

1.14.7 3D+ (new)

The new command group ATHENA 3D+ contains extensive tools for creating complex, dynamic 3D assemblies (e.g. corner profiles with a variable angle). You can now assign processes (for example, notches or drilled holes). Joint components (including drilled holes and screws for the profiles) can be defined and automatically assigned to the bars at the nodal points. You will find details in the respective section in the documentation.

- Design environment
- Bar Assembly Manager
- Apply bar assembly
- Create component
- Assembly Manager
- Component types
- Apply Assembly
- Modify assembly
- Infill manager
- Apply infill
- Bar joint manager
- Define nodes
- Process manager
- Apply processes to infill
- Assign processes to infill
- Arrangement manager
- Apply arrangement
- Analyze axis model
- Determine bar joint

- Determine infill
- Specify glazing
- Generating a section from 3D

1.15 Version 2008 (AutoCAD 2004-2009) September 2007

1.15.1 Menu and toolbar

The grouping of the commands in the menu and in the toolbar has been revised. Furthermore, control bars in the AutoCAD command navigator have been produced analogous to the working toolbars.

1.15.2 New dialog boxes

In order to make operation more user friendly new dialog boxes (MFC) have been introduced for the following commands:

- Membrane
- Insulation
- Spacer
- Gasket
- Seal
- Sheet metal section
- Layer assignment
- Hatch pattern assignment
- Label

Optionally most of these dialog boxes can be expanded to save frequently required objects and to facilitate access to libraries.

1.15.3 ATHENA options

The Options dialog box has been more clearly laid out. Settings which are frequently changed are accommodated in the main dialog box. Settings which are infrequently changed are concealed in sub-dialog boxes. New features include information on the ATHENA version and the product activation of the program.

1.15.4 Leader and Parts labeling

The appearance of the leaders can now be formatted in various ways. They can also, for example, be used as position symbols. Furthermore, bilingual labels are possible.

1.15.5 Position symbols and Infills

For the position symbols generally leaders are now used.

1.15.6 Center of gravity and moments

In the table optional additional information, for example weight, can be output.

1.15.7 Sheet processing

The development of Alucobond has been released. Furthermore, the methods of shortening folded edges and joint formation have been extended.

1.15.8 Frame element

Window and door elements are now also ARX objects which can be stretched with grips. Also, variable corner cuttings have been introduced.

1.15.9 Standard Part

Standard parts are now displayed more clearly laid out in a tree structure. In addition a Find function has been integrated.

1.15.10 Welded seam

Welded seams can now be linked to the welded seam label. Furthermore, spot welds can be better illustrated.

1.15.11 Arrange viewports

The position of the viewports can be displayed optionally in the modeling section.

1.15.12 Create script

The script can be started directly and DXF files can be integrated.

1.15.13 Outline (new)

In a dialog box you can define an outline and insert it into the drawing.

1.15.14 Grid division (new)

Any surface can be divided up a grid. The size of the panels and other parameters are now defined in a dialog box. Optionally you can insert the outlines and a table into the drawing.

1.15.15 Axis (new)

With this command you can create axes with an overlap.

1.15.16 Change bending radius (new)

With this function you can change individual radii of a sheet metal section.

1.15.17 Arrange dimension texts (new)

With this command you align dimension texts in a row. This is very helpful when working with layouts.

1.15.18 Convert spline (new)

This command converts a spline into a polyline. This function is required when you extrude an outline or when you want to carry out structural analysis computations.

1.15.19 Assign block label (new)

With this command you can assign label texts to a block. They can be configured and appear on the leader when you label the block.

1.15.20 Block element visibility (new)

Here, you can control the visibility of dimensions, texts, hatching, and labels contained in blocks.

1.16 Version 2009 (AutoCAD 2007-2009) October 2008

1.16.1 Operation

In addition to the classical toolbars and menus you can call many commands also via the command navigator or the multifunction bar (ribbons). However, this is only possible in combination with AutoCAD 2008 or AutoCAD 2009.

1.16.2 Revision of the dialog boxes

A universal standard has been applied to the dialog boxes. Previews are now always arranged at the top left and the operating section is located at the bottom right of the dialog box.

Furthermore, in the dialog boxes you can change between the sections Properties and Manager using tabs or register buttons. These registers replace the button [<] for displaying the manager section.

1.16.3 Facade elevation (revised)

The old command has been completely revised. Some new features:

- It is possible to optionally specify a raw shell size.
- You can automatically apportion mullion and transom intervals.
- You can specify different properties (e.g. profile elevation widths) for external and internal profiles.
- Optionally, sections and symbols for sections as well as profile joints can be inserted.

1.16.4 Grid division

You can specify the area of the grid division also through object selection. You can retrospectively supplement islands and remove the grid at the press of a button.

1.16.5 Infill

You can assign saved folds to foldable layers (e.g. on panels).

1.16.6 Stairway calculation (new)

You can subdivide a line into steps using the stairway formula. The stairway parameters can be set in a dialog box.

1.16.7 Standard Part

Some standard and manufacturers' parts have been supplemented and updated.

1.16.8 Screwed joint

You can sort the constituent parts of the screwed joint and adapt their label properties.

1.16.9 Semi-finished product

There is a new semi-finished product variant, octagonal.

1.16.10 Drilled hole

With the through holes the tolerance class has been supplemented with coarse. Furthermore, drilled holes in inch are also now available.

1.16.11 Pipe (new)

With this command you can create and combine pipes in the drawing.

1.16.12 Section symbol (new)

Using this, you create a section line with symbol.

1.16.13 Welded seam

You can now also convert polylines into welded seams.

1.16.14 Sheet metal section

You can display the coating line optionally circumferentially and on the face side. Furthermore, you can define a termination fold. There is a selection of various fold variants.

1.16.15 Sheet processing

You can now also extend folds sideways. Furthermore, you can save folds for further use in a data base.

1.16.16 Divide dimension (new)

With this program you can divide up a segment with linear dimensions. The division rules for the dimensions can be defined in a dialog box.

1.16.17 Levels

There is now a dialog box in which the levels can be selected. Also, existing levels can be interchanged.

1.16.18 Labels

A separate layer is now used for labels. Furthermore, you can use a separate dimension style for labels.

1.16.19 Remove cutting (new)

With this command you can remove a bar cutting from a bar end.

1.16.20 Reset axis model (new)

With this command you reset the analyzed axes to lines.

1.16.21 Position model (new)

With this new routine you can create an axis model of your 3D construction with position numbers of the profiles and infills.

1.16.22 Assembly list (new)

This routine writes a list of all assemblies to the Windows clipboard.

1.17 Version 2010 (AutoCAD 2007-2010) August 2009

1.17.1 General Adaptations

General internal program adaptations and conversions were carried out for the new DWG format of AutoCAD 2010.

Moreover, further tabs for the multifunction bar in AutoCAD 2010 were produced.

1.17.2 Additional materials

The material database in the ATHENA Options was expanded and updated.

1.17.3 Material default for various objects (new)

Material defaults for spacers, gaskets and seals are now possible in the command macro. Spacer variants with various materials were provided.

1.17.4 Object to solid body (new)

With this command you can convert 2D objects into 3D solids (ATHENA objects). This functions with standard parts, semi-finished products, screwed joints and drilled holes.

1.17.5 Projection objects (new)

With this command you can generate 2D projections of standard parts and screwed joints as well as semi-finished products and drilled holes. Project views of profiles can be sliced and merged together.

1.17.6 New views for parts

Standard parts, semi-finished products, screwed joints and drilled holes can now be inserted into additional elevations (2D side elevation from left or right, 2D plan view, 2D bottom view, 2D front elevation, 2D rear elevation) or inserted into the drawing directly as 3D objects. Project views of profiles can be sliced and merged together.

1.17.7 Axis Symbol

This command was previously only available as a sub-dialog box or via keyboard input and has been integrated into the user interface.

1.18 Version 2012 (AutoCAD 2010-2012) August 2011

1.18.1 General Adaptations

- Easy installation for all users and choice of the default profile
- New ribbon groups
- New grips for various ATHENA objects
- Increase in working speed in 3D
- Resetting of object details to the as-shipped state
- Many revised dialog boxes
- Full support of AutoCAD labeling functions
- Further ATHENA objects can be saved in libraries

1.18.2 New 2D commands

1.18.2.1 Presettings

Controls default settings for various 3D functions.

1.18.2.2 Material

Offers direct access to material settings (this was formerly only possible via options).

1.18.2.3 Layer

Offers direct access to layer and hatch settings (this was formerly only possible via options).

1.18.2.4 Design environment

Offers direct access to the design environment (this was formerly only possible via options).

1.18.2.5 Wall

Creates a wall from one or more layers.

1.18.2.6 Generating a section from 2D

Generates a section through a facade elevation or an element.

1.18.2.7 Cover mode

Controls the display of surrounding edges with covered objects (formerly surrounding edges of covered objects were generally not displayed).

1.18.2.8 Change dimension settings

Changes various dimension settings (e.g. scaling and accuracy) of dimensions.

1.18.2.9 Highlight associated dimension objects

Highlights dimension objects which belong to the same dimension system as the selected dimension object. In this way you can check which interrupted dimensions or levels belong to one another.

1.18.2.10 Coordinate label

Creates associative labels of coordinate points which are related to a defined base point (coordinate origin).

1.18.2.11 Align leaders

Aligns leaders in the current view or in the current coordinate system.

1.18.2.12 Coating extent

Calculates the circumference and partial circumference of an outline and outputs it to a table. The selected circumference of the outline is marked with a coating line.

1.18.2.13 Auxiliary line, angle bisecting

Generates an auxiliary line which bisects the angle between two lines which are selected.

1.18.2.14 Name UBlock

Converts an unnamed block into a named block.

1.18.3 Changes and expansions of 2D commands

1.18.3.1 Info

Now also shows information about the job

1.18.3.2 Standard Part

The following new standards have been implemented:

- Thread-forming screws, DIN 7500
- MAGE screws
- Fischer screws
- Hilti screws
- JORDAHL channels

1.18.3.3 Sheet metal section, Membrane, Insulation

The dialog boxes for these commands can be closed immediately after calling the command by pressing the Enter key in order to draw these objects via the input request. This enables you to create many objects with identical properties very quickly one after the other.

1.18.3.4 Infill

Infills can now be stretched, e.g. with grips.

1.18.3.5 Facade elevation

The command now has a completely new dialog box with comprehensive ways of creating even more complex facade elevations. Furthermore, you can generate sections (simplified) from the facade elevation.

1.18.3.6 Frame element

The command now has a new dialog box with division possibilities for creating more complex element elevations. Furthermore, you can generate sections (simplified) from the element elevation.

1.18.3.7 Horizontal levels and Vertical levels

Levels can now be modified in many ways. For example, the symbol for all levels can be substituted. Levels can be scaled depending on the set label scale.

1.18.3.8 Dimensioning options

With automatically created dimensions you have the possibility of activating a so-called model dimension. Model shapes are then dimensioned according to defined rules.

1.18.3.9 Offset auxiliary line

Auxiliary lines can be offset at various distances.

1.18.3.10 Hatch

There are new predefined hatch patterns for the materials stainless steel and silicone.

1.18.3.11 Rw value computation

The output of the computation has been more clearly laid out.

1.18.4 New 3D commands

1.18.4.1 Assign bar assemblies

Assigns two separate bar assemblies (e.g. carrier profile and glazing) to ATHENA axes (null bars).

1.18.4.2 UCS/VIEW bar

Sets the user coordinate system or the view by selecting a bar.

1.18.4.3 Infill plane

Creates infill planes. These can be very quickly converted into infills by assignment or be used as boundary objects for bars.

1.18.4.4 ATHENA Extrusion

Extrudes 2D outlines (circles or polylines) and creates a 3D solid.

1.18.4.5 Visibility of bar components

Superimposes or masks out bar components in the complete drawing or a section of the drawing.

1.18.4.6 Bar work

Sets manual processes (drilled holes or notches) on a bar.

1.18.4.7 Associative bar work

Sets associative processes (drilled holes or notches) on a bar.

1.18.4.8 Export CNC

Exports the geometric information of bars in an NCW file or XML file.

1.18.4.9 Export ERP

Outputs 3D models (bars, assemblies and infills) to an XML file. This file can be read in with an ERP system (ERPlus).

1.18.4.10 Shear object

Displays a cross section cut at specified saw and oblique angles in the drawing.

1.18.5 Changes and expansions of 3D commands

1.18.5.1 Grips, grip editing of bars

Bars can be extended and mirrored with grips.

1.18.5.2 Bar properties

Modifies the properties of one or more bars.

1.18.5.3 Analyze axis model

After the analysis the null bars are marked with a cone showing the direction.

1.18.5.4 Bar Assembly Manager

Offers additional, simplified ways of defining cutting outlines.

1.18.5.5 Cutting and Determine bar joint

Further methods for bar cuttings have been introduced.

1.18.5.6 Bar diagram and Infill diagram

The diagrams have been improved. Single-part drawings can be created with automatic caption labels and dimensions.

1.18.5.7 Generating a section from 3D

Marking of the sectional plane and other options have been implemented.

1.18.5.8 Assembly Manager

The dialog box has been revised. For example, operation is easier due to additional views and a UCS symbol.

1.19 Version 2013 (AutoCAD 2009-2013) August 2012

1.19.1 General Adaptations

- Revised ribbon
- Calculation of the computation values for sheet development has been modified.
- Library objects can be imported from other drawings (*.dwg, *.dwt, *.dxf).
- Materials and their properties can be imported from DEX files.
- New, more modern dialog boxes for infills, attach bar assemblies and other commands.

1.19.2 New commands

1.19.2.1 Facade elevation+

Applies bar assemblies (mullions, transoms, glazing) and infills (panes, panels) to axes and fields of an existing facade elevation.

1.19.2.2 Stairway

Creates a stairway through the entry of parameters and evaluates them.

1.19.2.3 Space projection

Projects a plan area (optionally with islands) by entering three height points and creates an area in space.

1.19.2.4 Leader arrow on/off

Deletes or supplements leader lines of label texts.

1.19.2.5 Frame Element Manager

Defines and changes insert elements (views of windows, doors). Insert elements can be saved as library objects.

1.19.2.6 Apply frame element

Uses insert elements (views of windows, doors) in the drawing.

1.19.3 Job management

With the new commands for job management you can define project or job data and assign them to your 3D constructions (bars, infills), facade elevations and insert elements.

Objects, which have been labeled with job data and positioned, can be assigned a tag, so that the same parts are brought together in the output of the parts list.

1.19.3.1 Project Manager

Defines jobs and job parts.

1.19.3.2 Positions

Allocates bars, infills, insert elements to a job and issues position numbers.

1.19.3.3 Assign tags

Assigns tags to bars, infills and insert elements of a job. Here, same-part recognition takes place.

1.19.3.4 Label tags

Labeled objects, the tags of which have been assigned.

1.19.3.5 Position model

Creates an axis model of a construction and labels the axes and areas with position numbers or tags.

1.19.3.6 List of frame elements

Writes a parts list of the insert elements to the Windows clipboard.

1.19.3.7 List of facade elevations

Writes a parts list of the facade elevations to the Windows clipboard.

1.19.3.8 Bar list, Infill list

Writes a parts list of bars or infills to the Windows clipboard.

1.19.4 Changes and expansions of commands

1.19.4.1 Standard Part

The following new standards have been implemented:

- Split plugs
- Powers plugs
- Powers screws
- MAGE screws

1.19.4.2 Infill

Chamfers can be separately defined per layer side.

1.19.4.3 Leader, multilingual texts

Multilingual texts from a text database (ath_user.rsx) can now be directly selected from a list and used.

1.20 Version 2014 (AutoCAD 2009-2014) January 2014

1.20.1 General Adaptations

1.20.1.1 Ribbon

The ribbon has been restructured and new commands have been added.

1.20.1.2 Hardware protection

Older Sentinel/Rainbow hardware protection plugs are no longer supported and will be replaced.

Network protection plugs must be updated and can be more conveniently managed.

1.20.1.3 Libraries, Library Objects

The folder structure is now also illustrated in the drawing. In this connection *.olbx has been introduced for libraries of the new file type. Drawings with the old structure are opened in the compatibility mode.

1.20.1.4 Help

The ATHENA Help is now available on-line (it can be switched off in the ATHENA options).

1.20.1.5 Temporary display for ATHENA objects

ATHENA line objects (sheet metal, membrane, welded seam, etc.) are now generated directly for drawings. Consequently, there is no more temporary display which disappears on zooming and panning.

1.20.1.6 Add selected

This AutoCAD command can also be used for ATHENA objects.

1.20.1.7 Performance

The performance on changing from layouts has been improved (performance switch in the ATHENA options).

1.20.1.8 Design environment

If you have loaded external layers and materials via the design environment, layer and material changes can be saved alternatively in the loaded fields or your own files.

1.20.1.9 Optimized leaders

ATHENA leaders have been optimized. With scalable leaders with several scales the position of the leader can be changed separately for each scale.

1.20.1.10 New dialog boxes

Dialog boxes for commands of the LogiKal interface and Welded seam have been reviewed.

1.20.2 New commands

1.20.2.1 ATH_LEADERTYPE

Controls the use of optimized labels. These system variables influence both the generation of new leaders and also the conversion of existing leaders from earlier ATHENA versions.

1.20.2.2 Sheet metal dimension

Generates automatic dimensions

1.20.2.3 Label background color ON and Label text background color OFF

Activates or deactivates the **background** infill color for text for all labels in the current drawing.

1.20.2.4 Add leader line and Remove leader line

Two new commands to supplement or remove leader lines on leader labels.

1.20.2.5 Add leader line segment and Remove leader line segment

Two new commands to supplement or remove leader line segments on leader labels.

1.20.2.6 Modify object label

Changes the labeling texts of several objects of the same groups (e.g. label properties of all standard profiles, standard screws, membranes...).

1.20.2.7 Align leaders

Aligns leaders in the current view or in the current coordinate system.

1.20.2.8 Wall manager and Apply wall

Two new commands for managing and inserting wall cross sections.

1.20.2.9 Model Inspection

Used for checking constructions, e.g. before generating production documentation.

1.20.2.10 Visualize axis model

Draws regions in the sub-areas or an analyzed axis model (3D position) in order to visualize it.

1.20.2.11 Copy analyzed axis model

Copies an analyzed axis model (3D position).

1.20.2.12 Recalculate axis model

Leads to a recalculation of an analyzed axis model (3D position) after geometrical changes.

1.20.2.13 Detach position

Removes the job assignments and position numbers assigned with the command from bars, infills and frame elements.

1.20.2.14 Export NC-X

Exports bars of a project in the NC-X format. Here a *.ncw file is written.

1.20.2.15 Export IFC

Exports a 3D model in the IFC file format.

1.20.2.16 List of facade elevations

This command creates a parts list for the facade elevations, and writes it to the Windows clipboard.

1.20.3 Changes and expansions of commands

1.20.3.1 ATHENA options

New dialog box with sub-dialog boxes.

1.20.3.2 Spacer

Chamfers on the four sides of the block can now be switched separately.

1.20.3.3 Standard Part

With manufactured parts there is now a direct link to the manufacturer's web site.

If you insert standard profiles as cross sections, you can change the insertion point by pressing the CTRL key.

1.20.3.4 Semi-finished product

If you insert a semi-finished product as cross section, you can change the insertion point by pressing the CTRL key.

1.20.3.5 Generating a section from 2D

Sections through the facade elevation+ are now associative.

1.20.3.6 Section symbol

Better standard-compatible display of the section symbol.

1.20.3.7 Levels and dimensions

The dialog fields for editing levels and dimensions have been expanded with a new menu field for standard texts.

1.20.3.8 Load layer

In addition to the drawing layers, material layers are now also loaded.

1.20.3.9 Display modes

Display simply now shows up to 16 edges. For contours with more than 16 edges the enclosing rectangle is shown as before.

1.20.3.10 Bar list, Infill list, List of frame elements

Optionally a list of the positions can be generated according to the tag.

1.20.3.11 Bar diagram

Optionally the same parts can be brought together (bar diagram according to the tag). Processes can be dimensioned.

1.20.3.12 Infill diagram

Optionally the same parts can be brought together (infill diagram according to the tag).

