

# User's Manual INTRODUCTION







# Note

This manual, along with all the training material of SCADA Pro, aims solely to act as a guide for the proper use of the application. Solid engineering knowledge in conjunction with the technical legislation is considered an essential prerequisite.

# Acknowledgments

ACE-Hellas would like to thank the R&D, the design and the commercial teams whose collaboration resulted in this manual. Special thanks are due to our colleague Ms. Amalia Bagourdi-Degkleri for her significant contributions in writing and reviewing this manual.

Version SCADA Pro18



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# I. THE COMPANY

ACE-Hellas SA (www.ace-hellas.gr), established in 1979 and a member of Quest's group of companies since 1999, is today one of the most innovative providers of information and communications technology (ICT) solutions in the market and a leading developer of structural design, engineering and sustainability software solutions.

A series of acquisitions, strategic partnerships and investments have enabled ACE-Hellas to become one of the fastest growing hi-tech solution providers, with deep knowledge of the European market, strong knowledge, and solid financial structure.

Being a strategic partner with the largest companies worldwide (Apple, Dell, HP, Contex, Microsoft, Autodesk, and others) has enabled the company to grow a customer portfolio with over 7.500 enterprises in South-East Europe.

The early adoption and implementation of Eurocodes have provided ACE-Hellas tremendous experience in producing superior quality results that meet all European and local regulations.

ACE-Hellas' mission is to develop software tools that enable people to build their ideas and bring them to life!

The strategy aims to provide our customers with end-to-end business solutions designed to take advantage of the capabilities new technologies offer to build a safer world, build it with speed while preserving resources.

The long-standing success of ACE-Hellas in the technical business ecosystem is due to its continued growth and expansion through innovation, and its ability to build a strong relationship with customers and partners based on trust & respect.

SCADA Pro is the ultimate platform for integrated structural analysis and design.

#### II. PROGRAM GENERAL INFORMATION

The innovative and revolutionary SCADA Pro is a leading software for the analysis and design of structures. By designing according to your needs and incorporating innovative technologies based on 30 years of continuous research and development, SCADA Pro provides all the tools for the quick and easy creation of accurate, reliable and supervisory models of your structures. By using automated processes, your architectural designs are converted, with a single click, into a three-dimensional numerical model ready for analysis and design.

SCADA Pro includes the state of the art of solvers for all types of analyses (linear or nonlinear) and covers all code provisions and regulations applicable in most European countries and Saudi Building Code (SBC). It combines truss, beams 2D and 3D, plane, plate and shell finite elements in the same spatial model with an unlimited number of nodes and finite elements. Tested by thousands of engineers around the world, it has been considered to be one of the most reliable, comprehensive and productive software for analyzing and designing all structural material made of reinforced concrete, steel, masonry, or timber.

SCADA Pro is a program constantly upgrading, evolving and adapting. The technical department of ACE-Hellas, in permanent cooperation with the National Technical University of Athens, ensures the continuous development and updating.

#### III. INTRODUCTION TO SCADA Pro

Click on the shortcut "SCADA Pro" to open the program.





The user can either select one of the quick tools inside "Start Screen" for direct access, or close the window and execute the command from the main menu.



Click on the following icons of the "Start Screen" to:





By using appropriate libraries, "SCADA\_revit\_families," provided to the user to adapt them to Revit, SCADA Pro automatically recognize all the structural elements (columns, beams) with their respective properties, generating in this way a model, which is ready for the analysis.



"ETABS, SAP2000": Read a .edb & .sdb file from ETABS & SAP2000 structural software .

The new two-way communication of SAP2000 and ETABS with SCADA Pro allows import and export of any project into SCADA Pro and SAP2000 / ETABS, respectively.

🕘 Open				×
Look in:	2.dwg	~	G 🤌 📂 🛄 -	
Quick access	Name	^	Date modified 5/12/2016 9:27 πμ	Type File folder
Desktop				
Libraries				
٢	<			>
Network	File name: Files of type:	SAP2000 files (*.sdb)	~ [	Open Cancel
Μονάδες Αρχείοι	u: m	SAP2000 files (*.sdb) ✓ ETABS files (*.edb)		

DWG
Dire
DVE

JAP2000

Imports a cad-2D, file and use it as a base file for <u>Automatic Level Creation</u> and <u>Automatic Section Identification</u>.

A detailed description of the automatic procedure based on the cad files are descripted in the concrete structure example.

Templates



Automatically create concrete, steel, masonry, timber structures as well as structures with 2D and 3D finite elements, by clicking on the following icons:



**1** The same commands are also located in SCADA Pro main menu. Detailed definition of these commands can be found on subsequent chapters (Chapter 2 "Modelling").

#### **Recent Projects**

Preview and open existing files from the start screen.

Recent Project
C:\IO\pushover6
C:\MELETES\Ntel\Ntel
C:\MELETES\1kotzar
C:\MELETSTEEL\3DSTEEL1
C:\MELETES\13Metal
c:\meletes\MyProject111
C:\MELETES\stamospo3
C:\MELETSTEEL\steelDGW
C:\MELETES\APFTOIX1
C:\MELETES\FTOIX1

List of the most recent files.

Clicking on the path of each file displays the model in preview and double-clicks opens the project.





A new field where users can refer to the auxiliary documents accompanying the program (User Manuals, Examples) and videos, get updates on new releases and program upgrades, and receive support from experienced staff.

In oder to open links for New Releases and Support, you need to have an internet connection.

Press on/for direct access to the program website.



When a new file is created, the General Parameters window is displayed in the interface, enabling the user to set initial parameters like the Material, the Regulation, the Project General Information and other parameters such as the Autosave time interval.

▲ Detailed definition of these parameters can be found on subsequent chapters (Chapter 11 "Addons").

Other Para	meters N So	creen	Drawing	9	Display
Project	General Information	ı	Mater	rial - Regu	ulation
Regulation	EC				~
National	General				~
Standard Stee	el Shapes	Euro			~
Concrete		Stee	el		
Foundation	C20/25 ~	Mem	nbers - Elemen	its S275(	Fe430) 🗸
Upper	C20/25 ~	Stee	el Plate	S275(	Fe430 $\sim$
		Bolts	3	4.8	~
Steel	0.400	Weld	ł	S275(	Fe430) 🗸
Main	5400s 🗸				
Stirrups	S400s ~	Timb	er	C14	$\sim$
Safety Facto	rs	vM0	vM1	vM2	vM3
Ultimate	Serviceabilit	1	1	1.25	1.25
үс 1.5	1	vM4	vM5	vM7	
γs 1.15	]	1	1	1.1	

WARNING: Materials must be according to the selected regulations, and at data entry, all cross sections have the right qualities (C for the youngest Regulations, B for Olders)

\* Predefined scenarios are created according to the selected regulation and nation, in the General Parameters window that opens automatically at the beginning of a new project.











			6. OSNAP ZOOM SELECT UNDO				
2162000	X/XX2°==0×	0 1	☑ ৵ ☑ � 📓 🖡	The Tools	managem	ient toolbar (c	onsap. zoom.
select, undo).					managem		,, ,,, ,,, ,, ,, ,,,,,, ,,,,,,,,,,,
Relative AA AB Tourn Jane Dravetter. Tourn J Tourn Name J Tourn Anno Dought Anno Anno Dought Anno Dough Anno Dough	The list of Pro existing elementstructural elem	perties that a nt is selected. ent and allows	7. PROPERTIES ppears on It contains the user to	the right i informatio modify ea	s automa on about sy and qu	atically fillec the proper uickly those (	d when an ties of the properties.
Trauprojet           Inv         25.00           h         35.00           hf         15.00           tm         89.00           function         0.00							
Анатарадкио 🖻 Париоотара —							
ATTENTION:							
Project Data		а 💦 🛛 С	Do not swi	ch off the	window	/s "Project	Data" and
Properties		т. Т. С.	restorati	on require	s a comp	on x, beca lex process.	ause their
			9. STATUS BAR				
WCS 876	.7 , 227.4 , 300.0	ORTHO	OSNAP	SNAP	GRID	CROSSING	INSIDE
The status ba coordinates,	ar at the bottom the active snap	n of the screen , etc.	provides e	xtra useful	informat	ion about th	e
			ΔΙΑΧΕΙΡΙΣΗ ΧΡΩΜΑΤΟΣ				
Click to one. Use the concrete, blu	o select the cold e virtual view t ue = steel, brow	or of a new ele o make the st n = masonry, b	ement, if yc ructure sh eige =timb	ou want it t own with r er).	o be diff ealistic r	erent from t naterial colo	he default ors (gray =



VI. DETA 1. FILE	NILED DESCRIPTION OF THE N	EW INTERFACE
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	Recent Documents	
New	1 C:\LIDRA15\9ksilino	
Open	2 C:\SCADA_15\dwg1	
Save	<u>3</u> C:\LIDRA15\4fortia	
	4 C:\LIDRA15\dubai1	
Save <u>A</u> s		
Close Project		
Import		
Export		
🙋 Export Scadafw		
Print •		
• •		
Start Screen		
<u>N</u> ew	Start a new project. In the dialc project. More specifically, type a	g box that appears, specify the details of the new a name in the "Name" field.
NEW		
lew Project		×
Project Name MyProject		
Details	^ ~	
Location		
Drives:	V Network	
C:\		
Scada 16 32BIT 64BIT DATA DirectX	ОК	
	Cancel	
Prerequisi	te for the program to work is to	give a name to the project.
The file of	ma should be up to 9 characte	rs without spaces and special characters (/
( <i>i.e., FILE1</i>	). The program automatically ci	reates a folder in which all the data is recorded. All



the projects should be located on the hard disk. It is a good to create a folder in C (*i.e.,* PROJECTS), which will contain all SCADA Projects (*i.e.,* C:\PROJECTS\FILE1)

## **ATTENTION:**

- 1. The entire path should be in Latin characters or numbers without spaces and special characters!
- 2. Create a separate folder that contains your SCADA Projects in C, and do not save it in the program folder!

Every time you start a new file, the program automatically creates a folder with the name you gave before and contains subfolders, ready to be filled in with all of the project data. The subfolders are:

- scanal: analysis files
- scades\_c: design files of concrete structural elements
- scades\_Sid: design files of steel structural elements
- scades\_Synd: design files of the steel connections
- scainp: input files of the linear structural elements (i.e., beams, columns) and the slabs
- scapush: pushover analysis files
- scatmp: temporary files
- tmp: temporary files
- progect.inf: basic project information

Open an existing project by selecting the file from the list. Open.. OPEN ScadaPro Oper Select a folder ScadaPro Project C:\3DKTIRIO\project.inf OK 📔 IO Cancel MELET scaop scaPus 4\_stylo\_ep ACCIAIO betonCRIS betonG CHURCH7 1 EC1 Gerfinal Gernodesi Gerstart

Close Project

Close a project without closing the application. SCADA Pro remains open to open another existing project or create a new one.



Save the active project with its current file name and location. The initially created project is automatically updated.

Moditional ability to save the project automatically at specified time intervals (Autosave).

💦 Sav	Save an active project file with a different name.
F Imp	ort
Copin Look is: Cuick access Deatop Deatop This PC Deatop This PC Deatop This PC Deatop This PC Deatop This PC Deatop This PC	with weights       Converted being         Work       Converted being         Work       Converted being         Being Pictures       Being Pictures         Being Pictures       Being Pictures         Work       Converted being         Work       Files (* DWG)         Work Files (* CDWG)       Work Files (* CDWG)         Work Files (* CDWG)       Work Files (* CDWG) <t< td=""></t<>
	Remember to select from the drop-down list measurement unit used in the imported file.
ر <sup>(h</sup> )	There is also the capability to import multiple DWG and DXF files (one or more per level) and save them with the project file. There is a detailed description in the command "Element Creation from DXF/ DWG" in Chapter 2 "Modeling".
* new	In the new version, you can also import a 3D dwg, dxf files on the 3D display.
(II)	The compatibility of SCADA Pro with Revit has become even more comprehensive. Revit project files are not only identified as simple drawing files, but the program also identifies the structural elements with their physical and the mathematical model characteristics
( <sup>Ly</sup> )	The collaboration of SCADA Pro with SAP2000 and ETABS allows importing and exporting projects from one program to the other. Structures of Reinforced Concrete, Steel, Masonry or Timber created with SAP2000 or ETABS can be imported in SCADA Pro for designing according to several code regulations (Eurocodes, Saudi Building Code, Greek codes, etc.).



Export project drawings in \*.dxf and \*.dwg file format, images in \*.bmp file format, \*.sca file format which opens with SCADAFW (an old version of the program) as well as \*.sdb and \*.edb file format which opens with SAP2000 and ETABS respectively.

🌑 Save As					<b>-</b> ×-
Save in:	퉬 LIDRA15		-	og 🤣 📂 🖽 🗸	
(Per	Name	*		Date modified	Туре
Recent Places	Ldwg 2.dwg 2.dwg 3.3/c Desktop 6tixplir 7/tixxpoila 8 antallina 9 antallina			15-Jun-15 10:54 AM 15-Jun-15 11:11 AM 05-Jun-15 2:18 PM 15-Jun-15 11:38 AM 17-Jun-15 5:05 PM 18-Jun-15 3:00 PM	File folder File folder File folder File folder File folder File folder
Computer SCADALS SCADA		Scada Dwg F Dxf Fil 3D_D 3D_D. Old_D	a Drawings(*.sca) a Drawings(*.sca) a Drawings(*.sca) a Drawings(*.sca) a Drawings(*.DWG) a Files (*.DWG) b Files (*.DWG)		
THE REAL PROPERTY OF THE PROPE	File name: *.SCA Save as type: Scada Drawings(*sca)		Old_D XML f XML f Bitmap SAP2 ETAB	bof Files (*.DXF) iles (*.xml) iles HoloBim (*.xml) o files (*.bmp) 000 files (*.sdb) S files (*.edb)	

Exclusively for SCADAFW users.

Allows exporting a file created with SCADAPro into SCADAFW (old version of the program).



Print the project as it appears in the SCADA Pro interface. Alternatively, a \*.bmp could be created though the "Export" command, or you can use the "print screen" command.





# 2 QUICK ACCESS TOOLBAR

In the SCADA Pro interface, all the commands are within the respective RIBBON UNITS. For greater convenience and quicker access to the most common commands, the user can create his own "Quick Access Toolbar".

Right click on the desirable command to select one of the available options.

- The first option is to add the selected command to the Quick Access.
- The second option is to manage the imported commands. ADD, REMOVE, SHIFT, etc.
- The third option is to move the toolbar above or below the Units.
- The fourth option is to hide or unhide the line of Units.

By pressing the arrow at the end of the Quick Access Toolbar you can perform similar customization.

					PLOCHATIA
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stomize					,
ustonia					
Choose	commands from			-	
Fle			2	awtch 2D - 3D	
Comman	nda:			Previous Level	
4	ieparatoro	,		Next Level	
2 Co	se Project				-
XE	t			Upnamic Rotation	
E 60	pot			ren Calo Math Model	
E ex	ebece hoo		Add >>	Hethematical	
E Inc	not				
No No	w.		Remove		-
iii 00	en				
🕼 Pm	nt.				
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📝 Per	nt Setup				
(A) Ou	ick Print				
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□ Shore	w Quick Access	Toobar below the Rb	bbon		
Keyboar	rd shortcuts:	Customize.			
				OK	Cancel Help
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10.00	Βα	σικό Μο	ντελοπ	Quick Print	
				More Commands	
	_			More Commands Show Below the	 Ribbon
	_		. 🗖	More Commands Show Below the	 Ribbon





- Dynamic Section



3.4	Tools
Basic	Modeling View Tools Slabs Loads Analysis Post-Processor Members Design Drawings-Detailing Addons Optimization
Renumbering A	tribute Beam Beam Column Beam Beam Column Beam Merging Adjustment UCS - WCS Model Version Beams To Version Ver
The 4 <sup>th</sup> l	Jnit is "Tools" and contains six command groups:
- 9	Structural elements
- l	JCS-WCS
- [	Model
- r	Vembers
- r	vodes Vorieve
- \	various
3.5	Slabs
Basic	Modeling View Tools Slabs Loads Analysis Post-Processor Members Design Drawings-Detailing Addons Optimization
Parameters Ide	🔍 🛗 🗙 😪 🕝 📓 🛄 ฐ 🏹 🏷 Cherts
	Slab correspondence v v nsert Edit Strips
The 5 <sup>th</sup> U - I - E - S	Init is "Slabs" and contains four command groups: nsert Edit Strips Checks
3.6	Loads
Basic	Modeling View Tools Slabs Loads Analysis Post-Processor Members Design Drawings-Detailing Addons Optimization
Load Load Cases Groups	Insert Edit Yield Slab Insert Edit View Copy Tools Parameters Edit View Member Post-Processor
Definition	Slab Loads Member Loads Wind - Snow Loads
The 6 <sup>th</sup> U - [ - 5 - 7 3.7 /	Unit is "Loads" and contains four command groups: Definition Slab Loads Viember Loads Wind-Snow Loads Analysis
Basic	Modeling View Tools Slabs Loads Analysis Post-Processor Members Design Drawings-Detailing Addons Optimization
New Ac	tive Scenario Scenari
The 7 <sup>th</sup> l	Jnit is "Analysis" and contains three command groups:
- 9	Scenarios
- F	Results
	liow



3.8 Post-Processor
Basic Modeling View Tools Slabs Loads Analysis Post-Processor Members Design Drawings-Detailing Addons Optimization
Combinations Deformed Animation 2D Numbering Edit Load Properties Stress Failure
Diagrams Display Properties* (by Pick) Criterion Deformation Diagrams Various
<ul> <li>The 8<sup>th</sup> Unit is "Post-Processor" and contains two command groups:</li> <li>Deformation Diagrams</li> <li>Various</li> <li>3.9 Members Design</li> </ul>
Basic       Modeling       View       Tools       Slabs       Loads       Analysis       Post-Processor       Members Design       Drawings-Detailing       Addons       Optimization         Image: A constraint of the stars       Image: A constraint of the constraint of the constraint of the stara
<ul> <li>The 9<sup>th</sup> Unit is "Members Design" and contains eight command groups:</li> <li>Scenarios</li> <li>Beams</li> <li>Capacity Design</li> <li>Columns</li> <li>Footings</li> <li>Slabs-Mesh</li> <li>Steel-Timber</li> <li>Masonry Design-2D Diagrams</li> </ul>
3.10 Drawings-Detailing
Basic       Modeling       View       Tools       Slabs       Loads       Analysis       Post-Processor       Members Design       Drawings-Detailing       Addons       Optimization         Image: Stable in the
<ul> <li>The 10<sup>th</sup> Unit is "Drawings-Detailing" and contains six command groups:</li> <li>File</li> <li>Drawing</li> <li>Formworks</li> <li>Edit</li> <li>View</li> <li>Level</li> </ul>
3.11 Addons
Basic       Modeling       View       Tools       Slabs       Loads       Analysis       Post-Processor       Members Design       Drawings-Detailing       Addons       Optimization         Image: Second

The 11<sup>th</sup> Unit is "Addons" and contains six command groups:



- Languages
- Parameters
- Bill of Materials
- Calculations Printout
- View
- Fischer

# 3.12 Optimization

		Basic	Modeling	View	Tools	Slabs	Loads	Analysi	s Pos	t-Processor	Members D	esign Dr	rawings-	Detailing	g Addons	Opt	timization
ſ	€	<b>9</b>	Â	1	22	2	1			1-1	*			x	<b>R</b>	1	
I	Objective Cost	e Object Performa	ive Genera ance Design Bo	al ounds	Constrains *	Unit Cost Material	Unit Cost Productivity	Section	Element	Algorithms	Convergence	Equality Excl	usion	RUN	Results Reset	Help	
L		Basic	Settigns		F	Formulatio	n	Design	Bounds	So	olve	Fuctionali	ties		RUN		

The 12<sup>th</sup> Unit is "Optimization" and contains six command groups::

- General Settings
- Parameters
- Design Bounds
- Solve
- Functionalities
- RUN



4	MANAGEMENT BAR	
	4.1 Style	
Style	Blue Style Black Style Silver Style Aqua Style Windows 7	
	4.2 Active Product	
ß	Activate Product Activate Product	

This is the activation dialog box of SCADA Pro.

After buying the program, the user recieves the serial number.

The serial number has the following characteristics:

- It consists of 16 digits, numbers and characters, separated by four dashes
- It is unique and includes all the purchased Modules.
- Any subsequent purchase of one or more of the same version Modules is implemented to the same serial number, without requiring any changes by the user.
- Upgrading to the next version requires a new Serial Number.

The program can be installed on as many computers as you like, but it can only be active in one. You can activate or deactivate the program, easily, as many times as you like, in the same or another computer.

# > To activate the program:

The first time you open the application, inside the environment of the program the window for activation appears.



🕋 😂 🗢 🛊 🖡 🖾 🎞 0-0.00 📑 🕥 🔻				- 8 ×
Basic Modeling View Tools Slabs Loads Analysis	Post-Processor Members Design	Drawings-Detailing Addons		Style - 🔒 🔚 - 🗊
Line Circle Arc Polygon Draft Edit	Autiselect Edit Layers - Levels	Properties Numberin Display Modify	g Layers DWG-DXF Clipboard	
- パイル L O O A X ユイズ X F 画 画 図 X @	2	N 🖾 🕑 🔛 I 🖍 🗘		
Δεδομένα Εργου 🗛 🗙			×	Properties     P
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				Property Value
	Product is not	registered!		
	Parala Para Jawa Antonia Mara	Desired entering		
	number and follow the instru	ctions provided.		
	button.	ne by pressing the Hep-About		
	Buy Now Regi	ster Later		
Ζ Παράμετροι 🗷 Δεδομένα Ε				>
wcs	ORTHO	OSNAP SNAP GRID	CROSSING INSIDE	
Product is not registered!	×			
ScadaPro is not registered! Press 'Pegister'	enter vour serial			
number and follow the instructions provided.	enter your sentar			
You may register at a later time by pressing t	the Help-About			
button.				
Buy Now Register	Later			

# Press **Register** to open the dialog:

**NOTE:** The same window opens by clicking the button with the padlock in the user interface, above on the right.

About ScadaPro				×
		Available Modules (Feat	tures)	
Scada Pro Copyright(	17 Rent 2018. 1. 1. 2864 ©) 2010-16 Ace Hellas SA	Analysis : Active Reinforced Concrete D Steel Structures Design Cold Formed Design : A	esign : Active n & Connections : Active Active	I
Serial Number	x0000000000000000000000000000000000000	200000X	Internet Ac	tivation
Offline Activation In case you are u below.	n Inable to activate online ple	ease proceed with offline	e activation after reading	the instructions
Product Code				Create Product Code
Activation Code	gIA +mOOn7k6HwJ6d0TBngh Iferrot	nLK6sE5GRe2F5cbN7qQj	jcZvR 1U/zKLnDPzS 1	Manual Activation
Instructions				
You can activate A) INTERNET: I i) T; ). ii) Cli application to st B) MANUAL: The You will need to i) T; ).	e your software using one f the computer where the s ype in or paste the serial nu ick on "Internet Activation" art using it. e computer where the soft activate by phone or e-ma ype in or paste the serial nu	of the following methods oftware is installed has umber given to you, in th . Activation is done auto ware is installed does NC ill: umber given to you, in th	s: an active internet conne ne serial box (including ar omatically. Please restart DT have an active interne ne serial box (including ar	ction. hy hyphens - the et connection. hy hyphens -
New version che	eck			
Automatically	check for updates	Check for i	updates	OK

- Enter the Serial Number,
- Press Internet activation and
- The program is activated automatically.



**NOTE:** *If you do not have an Internet connection, follow the activation instructions inside the Dialog Box.* 



Since the program has been activated, the field with the serial number becomes grey and the button in which **Internet Activation** was written before, now **Internet Deactivation** is written.

About ScadaP	ro		×	Open the program and	
Scada I Copyrig Serial Number Offline Activa	Pro 18 Rent 2018, 1.2. 1940 ght(©) 2010-18 Ace-Hellas SA ation	Available Modules (Features) Analysis : Active Reinforced Concrete Design : Active Steel Structures Design & Connections : Active Cold Formed Design : Active Internet Deactivation ease proceed with offline activation after reading the instructions		press the command with padlock	
below. Product Code Activation Co	de TuEIUj/CrtSgRyulJTuKBks	SiKsBuckDy/vRZwLWHn86wNdKTFFyOSX5I	Create Product Code Manual Activation	<ul> <li>Choose Internet</li> <li>Deactivation and</li> <li>The program is</li> <li>deactivated automatically</li> </ul>	
Instructions You can acti A) INTERNE ii) application t B) MANUAL: You will need i) ).	ivate your software using one T: If the computer where the s Type in or paste the serial nu Click on "Internet Activation" to start using it. The computer where the soft d to activate by phone or e-ma Type in or paste the serial nu	of the following methods: of twere is installed has an active internet connec imber given to you, in the serial box (including an , Activation is done automatically. Please restart ware is installed does NOT have an active interne il: imber given to you, in the serial box (including an	ttion. hy hyphens - the t connection. hy hyphens -	Now you can activate the program on the other computer.	
New version	a check cally check for updates	Check for updates	ОК		

# > To deactivate the program:



# 4.3 Language



The new upgraded version of SCADA Pro includes eight languages for the Interface. The switch is performed automatically.

Select the language from the list. Interface, elements, regulations and all the documents will be generated in the selected language.

The default language at the beginning of the program depends on the default language of the Windows operating system. By changing the language (either through "Management Bar" or the "Add-ons" UNIT) SCADA Pro temporarily closes and it re-opens in the selected language.

Files can be opened in all languages independently. You can start a file in one language and complete it in a different one.



With this command, you can see the properties of the program (Version, Build, etc.). Users with a valid maintenance contract can upgrade the program automatically when connected to the internet. When the program starts, a message will notify you in case of a new update. Accept updating and continue your work.

## 5. TREE

On the left side of the interface, you can find a "TREE" list with all model entities. This tree function is an interactive list, meaning that the user can select an element graphically and automatically display the element in the structure with the corresponding properties on the right side of the screen.

	\$	•	
	阳	All Objects	
,	\$	Per Level	
			120100

At first, the list is empty. Click on the button 🖻 and select the type of display The symbol before the name indicates that:

- there are elements in the group
- there are no elements in the group



Project Data	ά×	
📚 - 🥐		
<u>∎</u> • <b>†</b> 1 !		
i		Per Level

At first two groups are included:

elements that do not belong to a level.

this large group contains groups of objects on 0 level

As the user creates the levels of the project, the groups of the corresponding levels are generated.

All Object	ts:		
	All Objec	All Objects:	All Objects:

Groups of objects included. In the beginning, all groups are empty but are filled as the user import/design the structural elements in the model.

- 3D presentation + TREE Per Level

By selecting an item from the list, the 3D display of the corresponding level automatically appears while the element is colored red.









In SCADA Pro the command is selected first, before the selection of the elements.
 To cancel a command use the "Esc" button or the right mouse button and Select All.

#### 6.1 Osnap Toolbar

#### ? / / L @ @ O X \_ 1 // X % [" 🔤 🖻 🔯 🗡 Ø

The first nine commands and the 16th command activate the following snap points:



start - end
 middle
 nearest

🚣 vertical

🖉 tangent

X intersection

Firstly, select the span and afterwards click on the first line (beam or column) and then on the second line. The intersection point is the "x" point. Note that you might consider the intersection of two beams or the intersections of the sides of two columns as the intersection point.

# ---- projection

With this command, you can locate the projection of a point onto a specific line. Firstly, select the point of interest and then select the line you need to project it. The projection of the line is

the " 🖵 " point.

column vertices Selection of the vertices of a column



// parallel to

Use this command to create a new object (line or beam) parallel to a line. Define the first point of the new object and afterwards click on the osnap command. You can display the second point by hovering the cursor over the line.

Slide. You can use this command to define a point on a line.



Place a 40x40 cm column at 5.0 m distance from the edge of a line.

Define the column and then select the osnap command "Slide". Type the distance (500 cm) from the edge of the line in the window that appears.

Slie	de ×
Distance (cm)	500
ОК	Cancel

By hovering the cursor over the line, you will see the symbol denoting the position that the column is going to be placed



. Left click, and the column is placed.



🔀 Length – Angle.



This command is used to draw a point by defining the distance and the angle of inclination relatively to another point.

Firstly, select the command and then the osnap command. In the window that appears, define the values of distance and angle. In case of relative values hover the cursor over the desired point. L=800.00 Dx=-800.00 Dy=0.00 Dz=0.00 Angle=0.00

# X,Y,Z coordinates

This command is used for setting the X, Z coordinates of a point by using the coordinates of other points.

Firstly, select the command and then the osnap command. Left click on the first point to use its X-coordinate and left click again on the second point to use its Z coordinate. By choosing the second point, the point with the required coordinates appears automatically.

Relative Coordinates

This command is used for inserting points relative to another point. This point can be the previous inserted point or any other point.

Relative	Coordinates	×				
X (cm)	0	OK				
Y (cm)	0	UK				
Z (cm)	0	Cancel				
Relative to point						

# Place a 40x40 cm column at x=3.0 m end y=5.0 m distance from a point.

Draw a column by using the command "Relative Coordinates".

In the dialog box, type X and Z coordinates considering that these coordinates belong to a coordinate system the start point (0,0) of which is the relative point and the axes are the absolute axes. Then click the "OK" button.

Relative to point

to define a relative point with left click or deactivate

it to consider as relative point the previous inserted point.

Absolute Coordinates

Activate the checkbox

This command is used for inserting objects by using the absolute coordinates considering as a start point (0, 0, 0), the start point of the default coordinate system.

 Absolute Coordinates
 X

 X (cm)
 0

 Y (cm)
 0

 Z (cm)
 0

In the dialog box, type the X, Y and Z coordinates.

The Y coordinate is optional. If you keep value 0, the point gets the altitude of the current level.

× None

This command is used for cancelling the osnap command.

Coordinate Lock

This command is used for locking all the coordinates.



6.2 Zoom Toolbar

# 🧷 🔍 🕀 🔍 🔍 😻

#### 2 Redraw

This command is used for regenerating the entire model.

# ې پې پې

The following commands are used for better visualization of the model according to the user's needs.

- Zoom Window
- Zoom Limits
- **Zoom Previous**
- Zoom In
- Zoom Out

# 💐 Pan

This command is used for shifting the view with the same viewing direction and magnification

# 6.3 Select Toolbar

# 🗹 \land 🔽 🔗 🔛

Activate each command of the select toolbar with a left click:

- Select objects individually
- Select objects that are intersected by a polyline
- Select objects that are included in an area specified by a rectangular window
- Select objects that are included in an area specified by a polygon

## **IMPORTANT NOTES:**

In the Status Bar, when "Crossing" is inactive CROSSING, the objects intersected by the window or polygon will not be selected. On the contrary, when it is active **CROSSING**, they will be included in the selection, concerning the following options **INSIDE DUTSIDE**. Click to activate or deactivate the commands.

# 🕍 Select Group-Number

This command is used for selecting objects based on their common characteristics.



	Load Group							
Material	Concrete ~	Beams - B3D Y Add to List Clear List						
🗌 Туре	C8/10 ~	▼						
Element	B-3d V	B-3d - 373(28,29) - O 25/60 - L:Concrete Beams						
Member	Beam v	B-3d - 374(29,30) - O 25/60 - L:Concrete Beams B-3d - 375(50,31) - O 25/60 - L:Concrete Beams						
Layer	Lines circles V	B-3d - 376(51,50) - O 25/60 - L:Concrete Beams B-3d - 377(33,34) - O 25/60 - L:Concrete Beams						
Preference	Cross Section V	B-3d - 378(52,49) - O 25/60 - L:Concrete Beams B-3d - 379(49,32) - O 25/60 - L:Concrete Beams						
Color		B-3d - 380(32,33) - O 25/60 - L:Concrete Beams B-3d - 381(48,54) - O 25/60 - L:Concrete Beams B-3d - 382(53,46) - O 25/60 - L:Concrete Beams						
Select	From To Step	B-3d - 363(46,47) - O 25/60 - L:Concrete Beams						
Objects	0 0 0	B-3d - 385(36,35) - O 25/60 - L'Concrete Beams B-3d - 386(42,45) - O 25/60 - L:Concrete Beams B-3d - 387(45,37) - O 25/60 - L:Concrete Beams						
Add By Filter	Remove By Pick + Clear List	B-3d - 388(37,36) - 0 25/60 - L:Concrete Beams B-3d - 389(44,38) - 0 25/60 - L:Concrete Beams B-3d - 390(43,44) - 0 25/60 - L:Concrete Beams						
Load Group	Save Group OK	B-3d - 391(40,39) - O 25/60 - L:Concrete Beams						

1. Activate the checkbox "Material" or "Type", "Element Type", "Member Type", "Layer", "Preference", or "Color" and from the corresponding lists select the common characteristic.

To select a color, you can choose directly from the palette or enter the corresponding ID number of the color you desire.



Then click on the button Add By Filter to display on the white box on the right side all the elements with the specific characteristic. Click on the button ok and the selected items will appear on the screen with a dashed line.

- 2. Select a group from the list on the right and click on the button Add to List to display them on the white box on the right side. Click on the button Clear List to clear the box or select some elements and then click on the button Remove By Pick to remove only those.
- 3. The button Save Group enables the user to create groups of elements based on these criteria. The elements that belong to an already created group can be displayed by clicking on the button Load Group.



		Load Group	×
Material	Concrete	Save Group ×	✓ Add to List Clear List
Туре	C8/10	· · · · · · · · · · · · · · · · · · ·	✓
Element	B-3d	0.	L:Concrete Beams
Member	Beam	0	- L:Concrete Beams - L:Concrete Beams
Layer	Lines circles		- L:Concrete Beams - L:Concrete Beams
Preference	Cross Section		- L:Concrete Beams - L:Concrete Beams
Color Select	0	Group Name 04	- L:Concrete Beams - L:Concrete Beams - L:Concrete Beams - L:Concrete Beams - L:Concrete Beams
Objects		New Delete	- L:Concrete Beams - L:Concrete Beams - L:Concrete Beams
Add By Filter	Remove By Pick +	OK Cancel 0	- L:Concrete Beams - L:Concrete Beams - L:Concrete Beams
Load Group	Save Group	OK B-3d - 391(40,39) - O 25/60 - B-3d - 392(41.40) - O 25/60 -	L:Concrete Beams

#### 6.4 UNDO-REDO

This command is used for undoing the previous command.

This command is used for restoring the previous command.

## **6.5 Match Properties**

This command is used for attributing the properties of the object selected in other similar objects.

Layer	Color
Materia	Section
Soil interact	tion
Inertial	
Ak	A
Ix 🗌	Iy Iz
Asy	Asz
beta	
E D	G
_ε	at
Degrees of	Freedon
Degrees of	Freedom no
OK	Cancel

• Select the command and left click on an object to open the corresponding window containing the individual properties. Activate the checkboxes of the desirable properties and close the window. Then, select (using the selection tools) the similar objects to which the properties will be assigned.

• Concrete columns and walls are automatically distinguished based on the ratio of their cross-section (1:4 lower bound). Consequently, no column properties are applied to wall and vice versa.

• The properties that cannot be matched are automatically disabled.



# 7. PROPERTIES

**PROPERTIES** In the SCADA Pro interface, the Properties list appears on the right, informing the user about the properties of the selected object and allowing changes to be made.

The list is filled in automatically while selecting:

• an element from the interface

• an element of a subgroup in the TREE the command "Properties" within the "Basic" UNIT

20:24 💷 🗲 n/n Concrete Beam... Layer 31 Color Type B-3d E Cros -bos Bitmap First Node 50 31 **Final Node** Material Concrete Type C20/25 dx (Start) -40.00 dx (End) 40.00 dy (Start) 0.0 dy (End) 0.0 dz (Start) 0.0 dz (End) 0.0 N (Start) N (End) 101 Vy (Start) 101 Vy (End) 10

A detailed description of the lists of Properties is given in the respective chapter of the manual

# Additionally:



**#** 3

Solai-Sezioni 3

402 403 408 407 Calcest C25/30 Piastra 15.00

0.00 12.92 25.00

20 21 🗉 🗲

1. Selecting a mathematical member, the properties of the corresponding physical element appear in "Properties" list.











- **GRID**: Display or hide the grid
- CROSSING: It refers to the selection based on a rectangular window or a polygon. Active means that the objects that intersect will be included in the selection and inactive that will not be included

INSIDE

• INSIDE/OUTSIDE: Similar to the command CROSSING

# 10. COLOR

Enables the assignment of a color different from the layer's default



If you select a color in the virtual view mode, the structure appears with realistic material colors (gray = concrete, blue = steel, brown = masonry, beige =timber).