

Programming the SimaPro COM Interface

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Colophon

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Written by: PRé
Chris de Gelder, Michael Moore, Dennis Janssen

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Support
Phone: +31 33 4504010
Fax: +31 33 4555024
E-mail: support@pre-sustainability.com
Website: www.pre-sustainability.com

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1 Introduction

SimaPro is a versatile LCA tool, but in some occasions you need more than a stand-alone tool. For example, if you want to analyze a lot of data automatically you may want to integrate SimaPro and your business software.

In the SimaPro Developer version a COM-interface is available. This allows the user to control SimaPro from applications such as Excel, .NET applications, Delphi, PHP etc. Practical applications can be:

- Linking with your ERP system
- Analyzing a Bill of Materials from another software tool, such as a CAD/CAM system
- Exporting specific data to Excel
- Create processes from Excel sheets
- Create a website with results from SimaPro
- Create a website where users can enter data into processes in SimaPro.

Most functions and properties are only available if you have a valid SimaPro Developer licence. Some functions, i.e. those that check and handle licenses, are available without any Simapro license.

2 Supported environments and operating systems

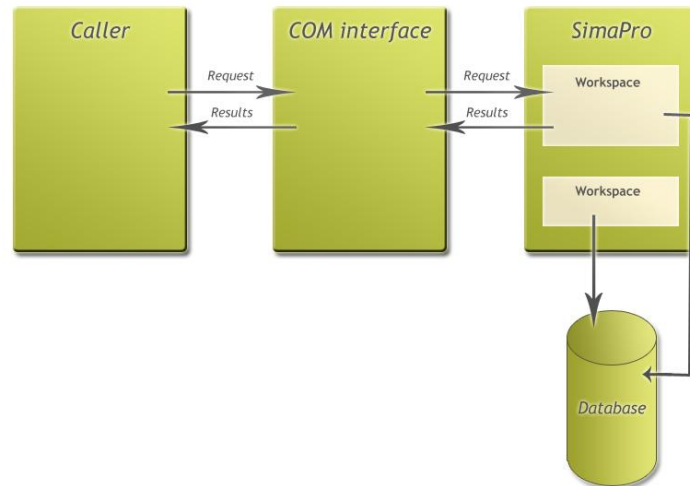
All software that can use COM interface are supported, for example:

- Excel, Word (VBA)
- Delphi
- C++
- Visual Basic
- PHP
- Visual studio (C#, VB.NET)

Using SimaPro and the COM interface to support a web server requires more on the user rights level. Most easy to use .NET, but ASP is also possible. COM is typical for Windows so it is only available on Windows Systems.

3 Architecture

Every caller has its own workspace within SimaPro. This workspace contains the opened database, project and calculation results of the last calculation.



4 Technical samples

Below you find some simple examples. Note for all samples: adapt the server name, alias, database and project and process names to your own situation. If you use the COM interface with a single user version then adapt the connection properties according to the following guidelines:

- Server is not empty but “local server”
- Alias is the directory where your database files reside
- Login details are ignored, i.e. User name and password
- The path to use for Alias and the name to use for Database can be found by opening the SimaPro application and selecting the menu option File->Open SimaPro Database
- The list of available projects can be found by opening the SimaPro application and selecting the menu option File->Open Project

4.1 VBA (Excel / Word)

This example creates a substance and 2 processes including parameters. One process gets input from the other.

Be sure to include “Simapro Library” to your VBA-references.

```

Sub CreateProcess()
  Dim SP As SimaProServer
  Dim PC As Process
  Dim PC2 As Process
  Dim PL As ProcessLine
  Dim Param As ParamLine
  Dim Subs As Substance

  Set SP = New SimaProServer
  SP.Server = "nexusdb@192.168.1.220"
  SP.Alias = "Default"

```

```

SP.Database = "Professional"
SP.OpenDatabase
SP.Login "Manager", ""
SP.OpenProject "Introduction to SimaPro 8", ""

SP.CreateSubstance "Air", Subs
Subs.CASNumber = "4-5-13"
Subs.Name = "Some substance"
Subs.DefaultUnit = "kg"
Subs.Update

SP.CreateProcess ptMaterial, PC
Set PL = PC.AddLine(ppProduct, -1)
PL.ObjectName = "Steel 2"
PL.UnitName = "kg"
PL.Amount = "2"
PL.Comment.Add ("My new created process")
PL.CategoryPath = "Chemicals\inorganic"

PC.Update

' create second material process Case
SP.CreateProcess ptMaterial, PC2
Set PL = PC2.AddLine(ppProducts, 0)
PL.ObjectName = "Case 2"
PL.UnitName = "kg"
PL.Amount = "10"

Set Param = PC2.AddParamLine(ptInputParameter, -1)
Param.Name = "A"
Param.Value = "2,3"

' add input from Steel
Set PL = PC2.AddLine(ppMaterialsFuels, -1)
' input from steel
PL.SetProduct "Introduction to SimaPro 7", ptMaterial, "Steel 2"
PL.Amount = "8"
PL.UnitName = "kg"

Set PL = PC2.AddLine(ppAirborneEmissions, -1)
' input from steel
PL.SetSubstance "Some substance", ""
PL.Amount = "A+1"
PL.UnitName = "kg"

PC2.Update

SP.Logout
SP.CloseDatabase
Set SP = Nothing

```

End Sub

4.2 Delphi

4.2.1 Calculate a single score

This example calculates the single score of a process, using the Eco-indicator 99 H/A method and returns the result.

```

var
  SimaPro: SimaProServer;
begin
  SimaPro := CoSimaProServer.Create;
  SimaPro.Server := 'nexusdb@192.168.1.220';
  SimaPro.Alias := 'Default';
  SimaPro.Database := 'Professional';
  SimaPro.OpenDatabase;

```

```

SimaPro.Login ('Manager', '');
SimaPro.OpenProject ('Introduction to SimaPro 7', '');
if SimaPro.Analyse('BUWAL250', ptMaterial, Electricity Netherlands B250 ',
  'Methods', 'Eco-indicator 99 (H)', 'Europe EI 99 H/A') then
begin
  memol.lines.add('single score = ');
  memol.lines.add(FloatToStr(SimaPro.AnalyseResult(rtSingleScore, 0).Amount));
end;

```

4.2.2 Create a process

This example creates a process with an input of plastic.

```

var
  SimaPro: SimaProServer;
  PC2: Process;
  PL: ProcessLine;
begin
  SimaPro := CoSimaProServer.Create;
  SimaPro.Server := 'nexusdb@192.168.1.220';
  SimaPro.Alias := 'Default';
  SimaPro.Database := 'Professional';
  SimaPro.OpenDatabase;
  SimaPro.Login ('Manager', '');
  SimaPro.OpenProject ('Introduction to SimaPro 7', '');
  SimaPro.CreateProcess (ptMaterial, PC2);
  PL := PC2.AddLine(ppProducts, 0);
  PL.ObjectName := 'Case 2';
  PL.UnitName := 'kg';
  PL.Amount := '10';
  PL := PC2.AddLine(ppMaterialsFuels, -1);
  PL.SetProduct ('BUWAL250', ptMaterial, 'PVC B250');
  PL.Amount := '8';
  PL.UnitName := 'kg';
  PC2.Update;
  memol.lines.add('ready');

```

4.3 PHP

This example, for PHP in console mode, prints an overview of all processes and product stages in a project to the console.

```

<?php
$SP = new COM("SimaPro.SimaProServer");
$SP->Server = 'nexusdb@192.168.1.111';
$SP->Alias = 'Default';
$SP->Database = 'Professional';
$SP->OpenDatabase;
$SP->Login ('Manager', '');
$SP->OpenProject ('Introduction to SimaPro 7', '');
print $SP->ProductCount + "\n";
for ($I = 1; $I < $SP->ProductCount; $I = $I + 1) {
  print $SP->ProductName($I) . "\n";
}
$sp = null;

?>

```


4.4 C++

The C++ is more complex due to the memory allocation requirements. Precondition is a form with a memo called memo1. Otherwise replace the "Memo1->Lines-Add" part with more suitable code.

This example below calculates the single score of a process, using the Eco-indicator 99 H/A method and returns the result.

```

BSTR Server = ::SysAllocString( L"nexusdb@192.168.1.220" );
BSTR Alias = ::SysAllocString( L"Default" );
BSTR Database = ::SysAllocString( L"Professional" );
BSTR User = ::SysAllocString( L"Manager" );
BSTR Project = ::SysAllocString( L"Introduction to SimaPro 7" );
BSTR ProcessProject = ::SysAllocString( L"BUWAL250" );
BSTR Process = ::SysAllocString( L"PVC B250" );
BSTR MethodLib = ::SysAllocString( L"Methods" );
BSTR Method = ::SysAllocString( L"Eco-indicator 99 (H)" );
BSTR NWSet = ::SysAllocString( L"Europe EI 99 H/A" );

TCOMISimaProServer SimaPro = CoSimaProServer::Create();
SimaPro->Server = Server;
SimaPro->Alias = Alias;
SimaPro->Database = Database;
SimaPro->OpenDatabase();
SimaPro->Login (User, L"");
SimaPro->OpenProject (Project, L"");
if (SimaPro->Analyse(ProcessProject, ptMaterial, Process,
    MethodLib, Method, NWSet))
{
    Memo1->Lines->Add("Single score = ");
    Memo1->Lines->Add(FloatToStr(SimaPro->AnalyseResult(rtSingleScore, 0)->Amount));
}

::SysFreeString(Server);
::SysFreeString(Alias);
::SysFreeString(Database);
::SysFreeString(User);
::SysFreeString(Project);
::SysFreeString(ProcessProject);
::SysFreeString(Process);
::SysFreeString(MethodLib);
::SysFreeString(Method);
::SysFreeString(NWSet);

```

4.5 VB.NET Sample

This example will create webpage with a list of all processes in a database and create a new process with a given name.

Create a website or aspx page in Visual Studio with

- 1 Label
- 2 Buttons
- 1 Textbox
- 1 GridView

And use the following code:

```

using System;
using System.Data;
using System.Collections;
using System.Configuration;
using System.Web;
using System.Web.Security;
using System.Web.UI;
using SimaPro;

```

```

using System.Web.UI.WebControls;
using System.Web.UI.WebControls.WebParts;
using System.Web.UI.HtmlControls;

public partial class _Default : System.Web.UI.Page
{
    protected void Page_Load(object sender, EventArgs e)
    {
    }

    protected void Button1_Click(object sender, EventArgs e)
    {
        SimaProServer SP = new SimaPro.SimaProServer();
        SimaPro.Process PC;
        SP.Server = "nexusb@192.168.1.220";
        SP.Alias = "Default";
        SP.Database = "Professional";
        SP.OpenDatabase();
        SP.Login("Manager", "");
        SP.OpenProject("Introduction to SimaPro 7", "");
        SP.CreateProcess(TProcessType.ptMaterial, out PC);
        ProcessLine PL = PC.AddLine(TProcessPart.ppProducts, -1);
        PL.ObjectName = TextBox1.Text;
        PL.UnitName = "kg";
        PL.Amount = "2";
        PL.Comment.Add("My new created process");
        PC.Update();
        SP.Logout();
        SP.CloseDatabase();
        Label1.Text = TextBox1.Text + " is created";
    }

    protected void Button2_Click(object sender, EventArgs e)
    {
        ArrayList AL = new ArrayList();

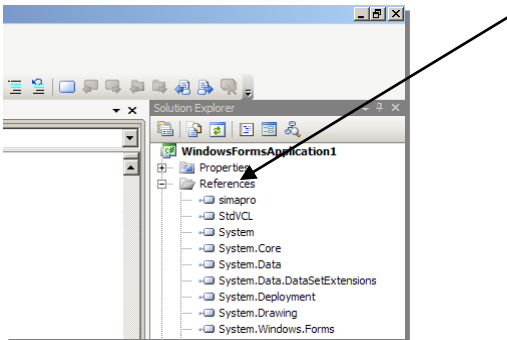
        SimaProServer SP = new SimaPro.SimaProServer();
        SimaPro.Process PC;
        SP.Server = "nexusb@192.168.1.220";
        SP.Alias = "Default";
        SP.Database = "Professional";
        SP.OpenDatabase();
        SP.Login("Manager", "");
        SP.OpenProject("Introduction to SimaPro 7", "");
        for(int I = 0; I < SP.ProductCount; I++)
        {
            AL.Add(SP.get_ProductName(I));
        };
        GridView1.DataSource = AL;
        GridView1.DataBind();
        SP.Logout();
        SP.CloseDatabase();
        Label1.Text = TextBox1.Text + " list done";
    }
}

```

4.6 C# Samples

4.6.1 Calculation example

In Visual Studio, this example creates a console application. You need to reference the SimaPro Library. Go to the Solution Explorer and add Reference. Choose the COM tab and select 'SimaPro Library' (Version 2.0).



Paste these code snippets into the Main method. Change the server name, alias and database to your own situation. If opening the database in single user mode, be sure to use double '\\\' in the alias, otherwise it will be handled as an escape character.

```
using System;
using SimaPro;

namespace ConsoleApplication
{
    class Program
    {
        static void Main(string[] args)
        {
            // Declare objects and strings to identify them
            SimaProServer SP;
            Process PCassembly;
            Process PCmaterial;
            ProcessLine PLassembleName;
            ProcessLine PLassembleMaterial;
            ProcessLine PMaterialProperties;
            string assembly = "New Assembly";
            string material = "Steel";
            string project = "Introduction to SimaPro 7";

            Console.WriteLine("Started app");

            // Open database and project
            SP = new SimaProServer();
            SP.Server = "local server"; // "nexusdb@192.168.1.113" if multi user
            SP.Alias = "C:\\Users\\Public\\Documents\\SimaPro\\database" // "Default" if multi user
            SP.Database = "Professional";
            SP.OpenDatabase();
            SP.Login("Manager", ""); // values ignored for single user
            SP.OpenProject(project, "");
            Console.WriteLine("Opened database and project");

            // Test if assembly already exists
            if (SP.FindProcess(project, TProcessType.ptAssembly, assembly, out PCassembly))
            {
                Console.WriteLine("Assembly already exists");

                PCassembly.Delete();
                Console.WriteLine("Assembly deleted");
            }
        }
    }
}
```

```

// Test if material already exists
if (!SP.FindProcess(project, TProcessType.ptMaterial, material, out PCmaterial))
{
    // Create material
    SP.CreateProcess(TProcessType.ptMaterial, out PCmaterial);
    Console.WriteLine("Created material process");

    PLmaterialProperties = PCmaterial.AddLine(TProcessPart.ppProducts, -1);
    PLmaterialProperties.ObjectName = material;
    PLmaterialProperties.UnitName = "kg";
    PLmaterialProperties.Amount = "2";
    PLmaterialProperties.Comment.Add("My newly created process");
    PCmaterial.Update();
    Console.WriteLine("New material process committed");
}
else
{
    Console.WriteLine("Material " + material + " already exists");
}

// Create new process object of type Assembly
SP.CreateProcess(TProcessType.ptAssembly, out PCassembly);
Console.WriteLine("Created process");

// Get process line of type 'Product' from the new Assembly object.
// For product-stage processes, this line is created automatically.
// This line is needed to set the name, comments and category path.
PLassemblyName = PCassembly.get_Line(TProcessPart.ppProducts, 0);

// Set properties of process line
PLassemblyName.ObjectName = assembly;
PLassemblyName.Comment.Add("My newly created assembly");
PLassemblyName.CategoryPath = "COM demonstration\\C# test";
Console.WriteLine("Created assembly");

// add material to assembly
PLassemblyMaterial = PCassembly.AddLine(TProcessPart.ppAssembliesAndMaterials, -1);
PLassemblyMaterial.SetProduct(project, TProcessType.ptMaterial, material);
PLassemblyMaterial.Amount = "2";
PLassemblyMaterial.UnitName = "kg";
Console.WriteLine("New material line added to assembly");

PCassembly.Update();
Console.WriteLine("New assembly committed");

// Logout and close database
SP.Logout();
SP.CloseDatabase();
SP = null;

Console.WriteLine("Press <Enter> to continue...");
Console.ReadLine();
}
}
}

```

This code creates a new assembly and material processes and attaches them in the project. If the assembly already exists, it is deleted and then recreated.

4.6.2 Activation Methods

With the COM interface you can take care of registration and activation of your SimaPro license. See the reference to find out which methods and properties exist on the SimaPro server object. Below you find a routine that tries to register and automatically activate a license.

```

/// <summary>
/// Handles the Click event of the ButtonRegister control.
/// Will check if current installation is not registered. If so, will
/// register a license.
/// </summary>
/// <param name="sender">The source of the event.</param>
/// <param name="e">The <see cref="System.Windows.RoutedEventArgs"/> instance containing
/// the event data.</param>
private void ButtonRegister_Click(object sender, EventArgs e)
{
    var SP1 = new SimaProServer();
    var registered = false;
    switch (SP1.LicenseStatus(TSoftwareProduct.spSimaPro))
    {
        case TLicenseStatus.lsActivatedWithService:
        case TLicenseStatus.lsActivatedNoService:
            textBox1.Text += "Error: RegisterLicense called while already activated!:\r\n";
            break;
        case TLicenseStatus.lsRegistered:
            textBox1.Text += "Error: RegisterLicense called while already registered!:\r\n";
            break;

        case TLicenseStatus.lsNoLicense:
            {
                try
                {
                    var LicenseCode = "ChoAAFiDGeCp0IESAAAA#" + "\r\n" +
                        "rQWXIXBVh0B3gqJ3Bd3AwI1MUZQE7ZDf13M64rHKuby5CATre" + "\r\n" +
                        "O+++guSjOi4rqh0qSk4hePsgXY3eOm5921ziJg5AH1pEwRVYao" + "\r\n" +
                        "w4QPvjHGR3kk7aAqqqqmXp1Qj9zws3loeZKnX1lDaMJZ60keOb" + "\r\n" +
                        "VD/qwaHBiVWN6mHkTHEwQ=";
                    var RegistrationName = "Mickey Mouse";
                    registered = (SP1.RegisterLicense(LicenseCode, RegistrationName) ==
TLicenseStatus.lsRegistered);
                    textBox1.Text += "DoRegister returned: " + registered;
                }
                catch (Exception u)
                {
                    textBox1.Text += "RegisterLicense error: " + u.Message + "\r\n";
                    return;
                }
            }
            break;
    }
}

/// <summary>
/// Handles the Click event of the ButtonActivateAuto control.
/// Will check if current installation is not activated. If so, will
/// activate current license.
/// </summary>
/// <param name="sender">The source of the event.</param>
/// <param name="e">The <see cref="System.Windows.RoutedEventArgs"/> instance containing
/// the event data.</param>
private void ButtonActivateAuto_Click(object sender, EventArgs e)
{
    var SP1 = new SimaProServer();
    var activated = false;
    switch (SP1.LicenseStatus(TSoftwareProduct.spSimaPro))
    {
        case TLicenseStatus.lsActivatedNoService:
        case TLicenseStatus.lsActivatedWithService:
            textBox1.Text = "Activation error: " + " already Activated" + "\r\n";
    }
}

```

```

        break;
    case TLicenseStatus.lsRegistered:
    {
        try
        {
            activated = (SP1.ActivateAuto() == TLicenseStatus.lsActivated);
            textBox1.Text = "Activation: " + activated;
        }
        catch (Exception u)
        {
            textBox1.Text = "Activation error: " + u.Message + "\r\n";
        }
    }
    break;
}
}
}

```

5 Reference

5.1 Core functions/properties

These functions and properties return an error if you do not have an active SimaPro Developer license with COM option.

5.1.1 Amount Property

Object	Method description
ProcessLine	Amount or percentage of product or substance
SimaProAnalyseResult	Amount of units substance or impact assessment score
SimaProNetworkResult	Amount of the product
SimaProTreeResult	Amount of the product

5.1.2 Cancel Method

Object	Method description
Process	Cancel edit mode and returns to read mode
Substance	Cancel edit mode and returns to read mode

5.1.3 Comment Property

Object	Property description
ParamLine	Comment of the parameter
Process	Comment of the process
ProcessLine	Comment
Substance	Comment

5.1.4 Distribution Property

Object	Property description
ParamLine	Distribution of the input parameter
ProcessLine	Distribution of amount

5.1.5 Edit Method

Object	Method description
Process	Set the object in edit mode
Substance	Set the object in edit mode

5.1.6 LineNumber Property

Object	Property description
ParamLine	Index in the section of the process to which the ProcessLine object belongs
ProcessLine	Index in the section of the process to which the ProcessLine object belongs

5.1.7 MainCompartmentName Property

Object	Property description
SimaProAnalyseResult	
SimaProServer	Name of a main-compartment

5.1.8 Maximum Property

Object	Property description
ParamLine	Maximum value of the input parameter
ProcessLine	Maximum value of amount

5.1.9 Minimum Property

Object	Property description
ParamLine	Minimum value of the input parameter
ProcessLine	Minimum value of amount

5.1.10 Mode Property

Object	Property description
Process	Mode of the object, can be: Read, New or Edit
Substance	Mode of the object, can be: Read, New or Edit

5.1.11 Name Property

Object	Property description
ParamLine	Name of the parameter
Substance	Name of the substance (e.g. 'Carbon dioxide')

5.1.12 ParamLine

Class **ParamLine**

Represents one parameter in SimaPro

[ParamLine.Comment](#)

Property **Comment** As IStrings

Comment of the parameter

Example

Add comment to a parameter

```
ParamLine1.Comment.add('estimated value')
```

ParamLine.Distribution

Property **Distribution** As TDistribution

Distribution of the input parameter

Example

Set the distribution to normal

```
Param1.Distribution := distNormal
```

ParamLine.Expression

Property **Expression** As String

Expression of the calculated parameter

Member of **ParamLine**

Example

B is A + 1

```
Param1.Name = 'B'  
param1.ParameterType = ptCalculatedParameter  
Param1.Expression = 'A+1'
```

ParamLine.Hide

Property **Hide** As Boolean

Only locally visible in process

ParamLine.LineNumber

Property **LineNumber** As Integer

Index in the section of the process to which the ProcessLine object belongs

Member of **ParamLine**

Read-Only

ParamLine.Maximum

Property **Maximum** As Double

Maximum value of the input parameter

Member of **ParamLine**

ParamLine.Minimum

Property **Minimum** As Double

Minimum value of the input parameter

Member of **ParamLine**

ParamLine.Name

Property **Name** As String

Name of the parameter

Member of **ParamLine**

Example

B is A + 1

```
Param1.Name = 'B'  
param1.ParameterType = ptCalculatedParameter  
Param1.Expression = 'A+1'
```

[ParamLine.ParameterType](#)

Property **ParameterType** As TParameterType

Section in the process to which the ProcessLine object belongs

Read-Only

Example

B is A + 1

```
Param1.Name = 'B'  
param1.ParameterType = ptCalculatedParameter  
Param1.Expression = 'A+1'
```

[ParamLine.Process](#)

Property **Process** As Process

Process to which the ParamLine object belongs

Read-Only

Can be used to trace the process properties.

[ParamLine.StandardDeviation](#)

Property **StandardDeviation** As Double

Standard deviation of the input parameter

[ParamLine.Value](#)

Property **Value** As Double

Value of the input parameter

Member of **ParamLine**

Example

Set A to 13

```
if Process.FindParameter('a', Param) then  
    Param.Edit  
else  
    Param = Process.AddParamLine(ptInputParameter, -1)  
    Param.Name = 'a'  
Param.Value = 13  
Param.Update
```

5.1.13 Process

Class Process

Objects comprising inputs and outputs that model the environmental impact of real world activities.

Process.AddLine

Function **AddLine**(ByVal Part As TProcessPart, ByVal LineNumber As Integer) As ProcessLine

Add a line and returns a ProcessLine object

Member of **Process**

Parameters	Description
Part	Part within process (ppProducts, ppMaterialsFuels etc)
LineNumber	Linenummer (zero based) -1 means: at the end

Return value

Returns **ProcessLine**

Example

Add emission and product to a process

```
Line := MyProcess.AddLine(ppEmissionsWater, -1);
Line.SetSubstance('Carbon dioxide', 'Air');
Line.Amount := '34';
Line.UnitName := 'g';
Line := MyProcess.AddLine(ppProduct, -1);
Line.ObjectName := 'My product name',
Line.Amount := '1';
Line.UnitName := 'kg';
Line.WasteType := 'Steel';
```

See also the example at `SimaProServer.CreateProcess`

Process.AddParamLine

Function **AddParamLine**(ByVal ParameterType As TParameterType, ByVal LineNumber As Integer) As ParamLine

Add a line and returns a ParamLine object

Member of **Process**

Parameters	Description
ParameterType	Type
LineNumber	LineNumber, -1 adds at end

Return value

Returns **ParamLine**

Example

Set A to 13

```
if NOT Process.FindParameter('a', Param) then
begin
    Param = Process.AddParamLine(ptInputParameter, -1);
    Param.Name = 'a' ;
end;
Param.Value = 13
```

Process.Cancel

Sub **Cancel**()

Cancel edit mode and returns to read mode

Example

Undo all edits

```
ProcessLine := Process.AddLine(ppProcesses, -1);
Process.cancel;
```

[Process.Comment](#)

Property **Comment** As IStrings

Comment of the process

Example

Set the comment

```
process.comment.add('changed by Joe');
```

[Process.Delete](#)

Sub Delete()

Remove a process from the database. An exception error is raised if process has already been deleted or it is being used as a sub-process.

Example

PC.Delete

[Process.DeleteLine](#)

Sub **DeleteLine**(ByVal Part As TProcessPart, ByVal LineNumber As Integer)

Delete a line

Parameters	Description
Part	Which part of the process
LineNumber	Which line within part (Zero based)

Example

Delete first product

```
Process.DeleteLine(ppProducts, 0)
```

[Process.DeleteParamLine](#)

Sub **DeleteParamLine**(ByVal ParameterType As TParameterType, ByVal LineNumber As Integer)

Delete a parameter line

Parameters	Description
ParameterType	Type of parameter
LineNumber	Linenummer (zero based)

Example

Delete second calculated parameter

```
Pc.deleteParamLine(ptCalculatedParameter, 1)
```

[Process.Edit](#)

Sub **Edit()**

Set the object in edit mode

Example

Change the waste type of 'Steel NL' to 'Steel'

```

If SimaPro.FindProcess('Sample project', ptMaterial, 'steel', pc) then
pc.Edit;
try
  // change waste type of first product
  pc.processline[ppProduct, 0].WasteType := 'Steel';
  pc.Update;
except
  pc.Cancel;
end;

```

Process.FindParameter

Function **FindParameter**(ByVal Name As String, ByRef ParamLine As ParamLine) As Boolean

Find a line and returns a ParamLine object

Parameters	Description
Name	Name of Parameter
ParamLine	Result

Return value

Returns Boolean

Example

Set A to 13

```

if Process.FindParameter('a', Param) then
  Param.Edit
else
  Param = Process.AddParamLine(ptInputParameter, -1)
  Param.Name = 'a'
Param.Value = 13
Param.Update

```

Process.Line

Property **Line**(ByVal Part As TProcessPart, ByVal LineNumber As Integer) As ProcessLine

Returns a ProcessLine object

Read-Only

Parameters	Description
Part	Part within process (ppProducts, ppMaterialsFuels etc)
LineNumber	Linenummer (zero based)

Example

Delete the emissions to air of Carbon Dioxide.

```

Pc := SimaPro.FindProcess(ptMaterial, 'steel');
Pc.Edit;
I := 0;
while I < PC.LineCount[ppEmissionsAir] do
begin
  if Pc.Line[ppEmissionsAir, I].ObjectName2 = 'Carbon Dioxide, biogenic' then
    Pc.DeleteLine(ppEmissionsAir, I)
  else
    Inc(I);
end;

```

Pc.Update;

Process.LineCount

Property **LineCount**(ByVal Part As TProcessPart) As Integer

Number of lines in a part

Read-Only

Parameters	Description
Part	Products etc

```

if SimaPro.FindProcess('Sample project', ptMaterial, 'steel', pc) then
begin
  Pc.Edit;
  I := PC.LineCount[ppEmissionsAir] - 1;
  while I >= 0 do
  begin
    s := pc.Line[ppEmissionsAir, I].ObjectName2;
    if Pc.Line[ppEmissionsAir, I].ObjectName2 = 'Carbon Dioxide, biogenic' then
      Pc.DeleteLine[ppEmissionsAir, I]
    else
      Dec(I);
    end;
  end;
  Pc.Update;
end;

```

Process.Mode

Property **Mode** As String

Mode of the object, can be: Read, New or Edit

Read-Only

Process.ParamLine

Property ParamLine(ByVal ParameterType As TParameterType, ByVal LineNumber As Integer) As ParamLine

Returns a ParamLine object

Read-Only

Parameters	Description
ParameterType	ptInputParameter,
LineNumber	Linenummer where you want to insert. -1 inserts at end

Process.ParamLineCount

Property **ParamLineCount**(ByVal ParameterType As TParameterType) As Integer

Number of parameters

Member of **Process**

Read-Only

Parameters	Description
ParameterType	ptInputParameter or ptCalculatedParameter

Process.ProcessType

Property **ProcessType** As TProcessType

Type of the process

Read-Only

Process.ProjectName

Property **ProjectName** As String

Name of the project to which the process belongs

Read-Only

Process.Status

Property **Status** As TProcessStatus

Status of the process

Example

Set status to draft

```
Pc.Status := stDraft;
```

Process.Update

Sub **Update()**

Store the data of the object in the database and switch to read mode

Example

Change the waste type of 'Steel NL' to 'Steel'

```
pc := SimaPro.FindProcess(ptmaterial, 'Steel NL');
pc.Edit;
try
  // change waste type of first product
  pc.processline[ppProduct, 0].WasteType := 'Steel';
  pc.Update;
except
  pc.Cancel;
end;
```

5.1.14 ProcessLine

Class **ProcessLine**

A line in a process as seen on screen in SimaPro. Can be either products, inputs or outputs.

ProcessLine.Allocation

Property **Allocation** As String

Allocation percentage of a product

ProcessLine.Amount

Property **Amount** As String

Amount or percentage of product or substance

Member of **ProcessLine**

Example

```
Line.SetProduct('eco invent unit processes', ptEnergy, 'Electricity UCTPE');
Line.Amount := '10';
Line.UnitName := 'kWh';
```

See also the example at `SimaProServer.CreateProcess`

ProcessLine.CategoryPath

Property **CategoryPath** As String
Category path of a product

Example

Change the category

```
AProcessLine.Category := '\others\chemicals';
```

ProcessLine.Comment

Property **Comment** As IStrings
Comment
Member of **ProcessLine**

ProcessLine.Distribution

Property **Distribution** As TDistribution
Distribution of amount

ProcessLine.LineNumber

Property **LineNumber** As Integer
Index in the section of the process to which the ProcessLine object belongs
Read-Only

ProcessLine.Maximum

Property **Maximum** As Double
Maximum value of amount

ProcessLine.Minimum

Property **Minimum** As Double
Minimum value of amount

ProcessLine.ObjectName

Property **ObjectName** As String
Name of the product

See the example at `SimaProServer.CreateProcess`

ProcessLine.ObjectName2

Property **ObjectName2** As String
Sub-compartment or material name
Member of **ProcessLine**
Read-Only

ProcessLine.Part

Property **Part** As TProcessPart
Section in the process to which the ProcessLine object belongs
Read-Only

ProcessLine.Process

Property **Process** As Process
 Process to which the ProcessLine object belongs
 Read-Only

ProcessLine.ProcessType

Property **ProcessType** As TProcessType
 Type of the product
 Read-Only

ProcessLine.ProjectName

Property **ProjectName** As String
 Name of the project to which the product belongs
 Read-Only

ProcessLine.ProjectName2

Property **ProjectName2** As String
 Name of the project to which the material belongs
 Read-Only

ProcessLine.SetMaterial

Sub **SetMaterial**(ByVal ProjectName As String, ByVal ProductName As String)
 Select a material and link it to the process; only for waste treatment product and specific waste flow
 Member of **ProcessLine**

Parameters	Description
ProjectName	Name of project (see SimaproServer.Projects)
ProductName	Name of product

Only for advanced disposal modelling. Use SetProduct to link inputs from technosphere.

Example

```
PC.SetMaterial('My project', 'Steel');
```

ProcessLine.SetProduct

Sub **SetProduct**(ByVal ProjectName As String, ByVal ProcessType As TProcessType, ByVal ProductName As String)
 Select a product of process as an input and link it to the process

Parameters	Description
ProjectName	Name of project
ProcessType	
ProductName	Name of the product

Link inputs from technosphere.

Example

```
Line.SetProduct('eco invent unit processes', ptEnergy, 'Electricity UCTPE');
Line.Amount := '10';
Line.UnitName := 'kWh';
```


ProcessLine.SetSubstance

Sub **SetSubstance**(ByVal SubstanceName As String, ByVal SubCompartmentName As String)

Select a substance and link it to the process

Parameters	Description
SubstanceName	Name as in the substance list
SubCompartmentName	Name of the subcompartment

Use this to define the emissions and raw material use of a process

Example

```
Line.SetSubstance('Carbon dioxide', 'Air')
Line.Amount := '11.4';
Line.UnitName := 'kg';
Pc.Update;
```

ProcessLine.StandardDeviation

Property **StandardDeviation** As Double

Standard deviation of amount

ProcessLine.UnitName

Property **UnitName** As String

Name of the unit of amount

Example

```
Line.SetProduct('eco invent unit processes', ptEnergy, 'Electricity UCTPE');
Line.Amount := '10';
Line.UnitName := 'kWh';
```

See also the example at `SimaProServer.CreateProcess`

ProcessLine.WasteType

Property **WasteType** As String

Waste type of a product or specific waste flow

5.1.15 Process Property

Select one of the available subtopics below to see detailed help on **Process** property

Object	Property description
ParamLine	Process to which the ParamLine object belongs
ProcessLine	Process to which the ProcessLine object belongs

5.1.16 ProcessType Property

Select one of the available subtopics below to see detailed help on **ProcessType** property

Object	Property description
Process	Type of the process
ProcessLine	Type of the product

5.1.17 ProductName Property

Select one of the available subtopics below to see detailed help on **ProductName** property

Object	Property description
SimaProNetworkResult	Name of the product
SimaProServer	Name of a product
SimaProTreeResult	Name of the product

5.1.18 ProjectName Property

Select one of the available subtopics below to see detailed help on **ProjectName** property

Object	Property description
Process	Name of the project to which the process belongs
ProcessLine	Name of the project to which the product belongs

5.1.19 SimaProAnalyseResult

Class **SimaProAnalyseResult**

Object containing substance list or impact assessment score resulting from the calculation of a process object.

[SimaProAnalyseResult.Amount](#)

Property **Amount** As Double

Amount of units substance or impact assessment score

Example

See SimaProServer.Analyse

[SimaProAnalyseResult.IndicatorName](#)

Property **IndicatorName** As String

Name of substance, impact category etc. In case of single score it is empty

Example

See SimaProServer.Analyse

[SimaProAnalyseResult.MainCompartmentName](#)

Property **MainCompartmentName** As String

Only for inventory results

[SimaProAnalyseResult.SubCompartmentName](#)

Property **SubCompartmentName** As String

Only for inventory results

[SimaProAnalyseResult.UnitName](#)

Property **UnitName** As String

Unit (e.g. kg, m3)

Example

See SimaProServer.Analyse

5.1.20 SimaProCalculationError

Class **SimaProCalculationError**

Object containing error details resulting from the calculation of a process object.

[SimaProCalculationError.AdditionalInfo](#)

Property **AdditionalInfo** As String

[SimaProCalculationError.ErrorCode](#)

Property **ErrorCode** As Integer

Number of the error

[SimaProCalculationError.ErrorDescription](#)

Property **ErrorDescription** As String

Description of the error

5.1.21 SimaProNetworkResult

Class **SimaProNetworkResult**

Object containing network flows resulting from the calculation of a process object.

[SimaProNetworkResult.Amount](#)

Property **Amount** As Double

Amount of the product

[SimaProNetworkResult.ChildProductName](#)

Property **ChildProductName** As String

Name of the child-product

[SimaProNetworkResult.ProductName](#)

Property **ProductName** As String

Name of the product

[SimaProNetworkResult.UnitName](#)

Property **UnitName** As String

Unit of the amount

Member of **SimaProNetworkResult**

5.1.22 SimaProServer

Class **SimaProServer**

Object handling connection to database and functions applied to collections of process objects.

SimaProServer.AddParamLine

Function **AddParamLine**(ByVal ParameterType As TParameterType, ByVal ParameterScope As TParameterScope, ByVal LineNumber As Long) As ParamLine

Add a project or database parameter line and returns a ParamLine object

Parameters	Description
ParameterType	Type of parameter: Input or calculated
LineNumber	LineNumber, -1 adds at end

ParameterScope psDatabase or psProject. psProject means currently open project

Return value

Returns **ParamLine**. If no project is open an exception is raised.

Example

Set project parameter A to 13

```
Param = SimaProServer.FindParameter('OptionA', psDatabase)
if Param is nothing then
begin
    Param = SimaProServer.AddParamLine(ptInputParameter, psDatabase, -1)
    Param.Name = 'OptionA'
    Param.Value = 13
End
```

SimaProServer.Alias

Property **Alias** As String

Currently used alias

See the example at SimaProServer.CreateProcess

SimaProServer.Aliases

Property **Aliases** As IStrings

List of available aliases, set Server first

Member of **SimaProServer**

Read-Only

SimaProServer.Analyse

Function **Analyse**(ByVal ProjectName As String, ByVal ProcessType As TProcessType, ByVal ProductName As String, ByVal MethodProjectName As String, ByVal MethodName As String, ByVal NWSetName As String) As Boolean

Perform the analyse function for a process or product stage

Member of **SimaProServer**

Parameters	Description
ProjectName	Name of project
ProcessType	Type of process
ProductName	Name of Product
MethodProjectName	Project name where method resides
MethodName	name of method
NWSetName	Normalisation Weighting set.

Return value

Returns Boolean

Example

Show the inventory

```
SP.Analyse('My project', ptMaterial, 'Steel', 'Methods', 'EI99', 'N/A');
// show inventory
for I := 0 to SP.ResultCount(rtInventory) - 1 do
begin
    Res := SP.AnalyseResult(rtInventory, I)
    Print Res.Amount, Res.IndicatorName, Res.UnitName;
end;
```

[SimaProServer.AnalyseResult](#)

Function **AnalyseResult**(ByVal AnalyseResultType As TResultType, ByVal I As Integer) As SimaProAnalyseResult
 Retrieve the result of the analyse function

Parameters	Description
AnalyseResultType	rtCharacterisation, rtDamage, rtNormalisation, rtWeighting, rtSingleScore or rtInventory
I	Index

Return value

Returns **SimaProAnalyseResult**

Example

See SimaProServer.Analyse

[SimaProServer.AutoUpdate](#)

Property **AutoUpdate** As Boolean
 Member of **SimaProServer**

When a database change has occurred, all operations will throw an exception.
 When this member has been set to true, a database conversion will occur, and operations can proceed.

SimaProServer.CalculationError

Function **CalculationError**(ByVal I As Integer) As SimaProCalculationError

Calculation error data

Parameters	Description
I	Index

Return value

Returns **SimaProCalculationError**

SimaProServer.CalculationErrorCount

Property **CalculationErrorCount** As Integer

Number of calculation errors

Read-Only

SimaProServer.CloseDatabase

Sub **CloseDatabase**()

Close the currently open database

SimaProServer.CloseProject

Sub **CloseProject**()

Close the currently open project

SimaProServer.CreateProcess

Sub **CreateProcess**(ByVal ProcessType As TProcessType, ByRef Process As Process)

Creates a new process

Parameters	Description
ProcessType	ProcessType (ptMaterial, ptEnergy, etc)
Process	Resulting process object

Example

Create 2 processes and link to each other, then link to an assembly (VB)

```
Dim SP As SimaProServer
Dim PC As Process
Dim PC2 As Process
Dim PC3 As Process
Dim PL As ProcessLine

Set SP = New SimaProServer
SP.Server = "nexusdb@192.168.2.113"
SP.Alias = "Default"
SP.Database = "Professional"
SP.OpenDatabase
SP.Login "Manager", ""
SP.OpenProject "A COM DEMO", ""

SP.CreateProcess ptMaterial, PC
Set PL = PC.AddLine(ppProducts, -1)
PL.ObjectName = "Steel"
PL.UnitName = "kg"
PL.Amount = "2"
PL.Comment.Add ("My new created process")
PC.Update
```

```

' create second material process Case
SP.CreateProcess ptMaterial, PC2
Set PL = PC2.AddLine(ppProducts, 0)
PL.ObjectName = "Case"
PL.UnitName = "kg"
PL.Amount = "10"

' add input from Steel
Set PL = PC2.AddLine(ppMaterialsFuels, -1)
' input from steel
PL.SetProduct "A COM DEMO", ptMaterial, "Steel"
PL.Amount = "8"
PL.UnitName = "kg"
PC2.Update

' create Assembly product stage
SP.CreateProcess ptAssembly, PC3
Set PL = PC3.get_Line(ppProducts, 0)
PL.ObjectName = "New Assembly"
PL.Comment.Add ("My newly created assembly")
PL.CategoryPath = "COM demonstration\Create process test"

' add Case material to assembly
Set PL = PC3.AddLine(ppAssembliesAndMaterials, -1)
PL.SetProduct "A COM DEMO", ptMaterial, "Case"
PL.Amount = "2"
PL.UnitName = "kg"
PC3.Update

SP.Logout
SP.CloseDatabase
Set SP = Nothing

```

SimaProServer.CreateSubstance

Sub **CreateSubstance**(ByVal MainCompartment As String, ByRef Substance As Substance)

Create a new substance

Parameters	Description
MainCompartment	MainCompartment goes here ('Air', 'Water', 'Soil', etc)
Substance	Resulting substance object

Example

Create a new substance

```

SimaPro.CreateSubstance('Air', Substance)
Substance.Name := 'My new substance'
Substance.UnitName := 'kg';
Substance.Update; // save in database

```

SimaProServer.CurrentProject

Property **CurrentProject** As String

Name of the currently open project

Read-Only

SimaProServer.CurrentUser

Property **CurrentUser** As String

Name of the user that is currently logged in

Read-Only

SimaProServer.Database

Property **Database** As String

Currently used database, see OpenDatabase

See the example at SimaProServer.CreateProcess

SimaProServer.DatabaseOpen

Property **DatabaseOpen** As Boolean

Indicates if a database is currently open

Read-Only

SimaProServer.Databases

Property **Databases** As IStrings

List of available databases, set Server and Alias first

Read-Only

SimaProServer.DeleteParamLine

Sub **DeleteParamLine**(ByVal ParameterType As TParameterType, ByVal ParameterScope As TParameterScope, ByVal LineNumber As Long)

Deletes a parameter from database or the current project

Member of **SimaProServer**

Parameters	Description
ParameterType	Type of parameter (input or calculated)
ParameterScope	Scope of parameter (project or database)
LineNumber	Linenummer

The collection of parameters is updated directly, so be careful deleting multiple parameters.

SimaProServer.FindParameter

Function **FindParameter**(ByVal Name As String, ByVal ParameterScope As TParameterScope) As ParamLine

Finds a parameter in the database or current open project

Parameters	Description
Name	Name of parameter
ParameterScope	Scope of parameter (project or database)

Return value

Returns **ParamLine** if found

SimaProServer.FindProcess

Function **FindProcess**(ByVal ProjectName As String, ByVal ProcessType As TProcessType, ByVal ProductName As String, ByRef Process As Process) As Boolean

Looks for a process in the project and libraries

Parameters	Description
ProjectName	Name of project
ProcessType	Type of process

ProductName Name
Process Result object

Return value
Returns Boolean

Example

Remove lines from process

```
if SimaPro.FindProcess('Sample project', ptMaterial, 'steel', pc) then
begin
  Pc.Edit;
  I := PC.LineCount[ppEmissionsAir] -1 ;
  while I > 0 do
  begin
    s := pc.Line[ppEmissionsAir, I].ObjectName2;
    if Pc.Line[ppEmissionsAir, I].ObjectName2 = 'Carbon Dioxide, biogenic' then
      Pc.DeleteLine[ppEmissionsAir, I]
    else
      Dec(I);
  end;
  Pc.Update;
end;
```

[SimaProServer.FindProcessEx](#)

Function **FindProcessEx**(ByVal ProjectName As String, ByVal ProcessType As TProcessType, ByVal ProductName As String) As Process

FindProcess version that returns a Process

Parameters	Description
ProjectName	Name of project
ProcessType	Type of process
ProductName	Name

Return value
Returns **Process**

Same as FindProcess but returns a process object. Useful in Java, which does not support passing parameters by reference, or if you prefer this style of programming.

[SimaProServer.FindSubstance](#)

Function **FindSubstance**(ByVal MainCompartmentName As String, ByVal SubstanceName As String, ByRef Substance As Substance) As Boolean

Find a substance in the database

Parameters	Description
MainCompartmentName	'Water', 'Air' etc
SubstanceName	Required substancename
Substance	Substance object

Return value
Returns Boolean

Example

Read CO2 CAS Number

```
PC.FindSubstance('Air', 'Carbon dioxide', Substance);
```

```
Print Substance.CASNumber;
```

You can also use

```
PC.SubstanceCASnumber('Air', 'Carbon dioxide')
```

[SimaProServer.LoggedIn](#)

Property **LoggedIn** As Boolean

Indicates if a user is currently logged in

Member of **SimaProServer**

Read-Only

[SimaProServer.Login](#)

Function **Login**(ByVal UserName As String, ByVal Password As String) As Boolean

Log in the database, not needed for single user if manager-password = empty

Parameters	Description
------------	-------------

UserName	Name of user
-----------------	--------------

Password	Password
-----------------	----------

Return value

Returns Boolean

See the example at [SimaProServer.CreateProcess](#)

[SimaProServer.Logout](#)

Function **Logout**() As Boolean

Log out from the database

Return value

Returns Boolean

See also the example at [SimaProServer.CreateProcess](#)

[SimaProServer.MainCompartmentCount](#)

Property **MainCompartmentCount** As Integer

Number of main-compartments

Read-Only

Example

List the maincompartments

```
for I := 0 to SP.MainCompartmentCount - 1 do
    print SP.MainCompartmentName(i)
```

[SimaProServer.MainCompartmentName](#)

Property **MainCompartmentName**(ByVal I As Integer) As String

Name of a main-compartment

Read-Only

Parameters	Description
I	Index

Example

See SimaProServer.MainCompartmentCount

[SimaProServer.MethodCount](#)

Property **MethodCount** As Integer

Number of impact assessment methods in the currently open project and selected libraries

Read-Only

[SimaProServer.MethodName](#)

Property **MethodName**(ByVal I As Integer) As String

Name of an impact assessment method

Read-Only

Parameters	Description
I	Index

[SimaProServer.MethodProjectName](#)

Property **MethodProjectName**(ByVal I As Integer) As String

Name of the project of an impact assessment method

Read-Only

Parameters	Description
I	Index

[SimaProServer.Network](#)

Function **Network**(ByVal ProjectName As String, ByVal ProcessType As TProcessType, ByVal ProductName As String, ByVal MethodProjectName As String, ByVal MethodName As String, ByVal NWSetName As String) As Boolean

Perform the network function for a process or product stage

Parameters	Description
ProjectName	Name of project
ProcessType	ProcessType (ptMaterial, ptEnergy, etc)
ProductName	Name of product
MethodProjectName	Project where methods are stored (often 'Methods')
MethodName	name of the Method
NWSetName	Name of normalisation weighting set

Return value

Returns Boolean

Example

Calculate a network and fetch the results of the top node

```
if SP.Network('My project', 'ptEnergy', 'Electricity', 'Methods', 'ei99', 'N/A') then
begin
    SP.NetworkCalcScore(rtIndicator, '', '', '');
    for I := 0 to SimaPro.NetworkChildNodeCount[SimaPro.NetWorkTopNodeIndex] - 1 do
begin
```

```

    Res := SP.NetworkResult(nrProductAmount,
                          SP.NetworkChildNodeIndex(SimaPro.NetWorkTopNodeIndex, i), 0);
    print Res.ProductName, Res.Amount, Res.UnitName;
end;
end;

```

SimaProServer.NetworkCalcScore

Function **NetworkCalcScore**(ByVal ResultType As TResultType, ByVal Param1 As String, ByVal Param2 As String, ByVal Param3 As String) As Boolean

Calculates the node and flow scores of a network.

Parameters	Description		
ResultType	Param1	Param2	Param3
rtCharacterisation	Impact Category	-	-
rtDamage	Damage Category	-	-
rtNormalisation	Damage Category or Impact Category	-	-
rtWeighting	Damage Category or Impact Category	-	-
rtSingleScore	-	-	-
rtInventory	MainCompartment	Subcompartment	SubstanceName

You can perform multiple NetworkCalcScores calculations on an existing Network.

Return value

Returns Boolean

Example

See SimaProServer.Network

SimaProServer.NetworkChildNodeCount

Property **NetworkChildNodeCount**(ByVal NodeIndex As Integer) As Integer

Number of child nodes of a network node

Read-Only

Parameters	Description
NodeIndex	Index of the node

All nodes are indexed. This function return the number of children of a certain node.

Example

See SimaProServer.Network

SimaProServer.NetworkChildNodeIndex

Property **NetworkChildNodeIndex**(ByVal NodeIndex As Integer, ByVal FlowIndex As Integer) As Integer

Index of a child node of a network node

Read-Only

Parameters	Description
NodeIndex	Node
FlowIndex	Flow of that node

Points to a node, for example get the productname with NetworkProductName

[SimaProServer.NetworkNodeCount](#)

Property **NetworkNodeCount** As Integer

Number of nodes in the network

Read-Only

[SimaProServer.NetworkProductName](#)

Property **NetworkProductName**(ByVal NodeIndex As Integer) As String

Product name of a network node

Read-Only

Parameters	Description
NodeIndex	Node

[SimaProServer.NetworkResult](#)

Function **NetworkResult**(ByVal NodeResultType As TNodeResultType, ByVal NodeIndex As Integer, ByVal FlowIndex As Integer) As SimaProNetworkResult

Retrieve the data of a network node

Parameters	Description
NodeResultType	nrProductAmount, nrIndicatorContribution, nrIndicatorTotal, nrFlowIndicator
NodeIndex	Node index see NetworkNodeCount
FlowIndex	Flow index (per node) See NetworkChildNodeCount

Return value

Returns **SimaProNetworkResult**

Example

See SimaProServer.Network

[SimaProServer.NetworkTopNodeIndex](#)

Property **NetworkTopNodeIndex** As Integer

Index of the top node of the network

Read-Only

Example

See SimaProServer.Network

[SimaProServer.NWSets](#)

Property **NWSets**(ByVal ProjectName As String, ByVal MethodName As String) As IStrings

List of normalisation-weighting sets in a method

Read-Only

Parameters	Description
ProjectName	Name of Project
MethodName	Name of Method

Example

Show the first NWSet

```
Print SP.NWsets('methods', 'ecoindicator 99')[0]
```

SimaProServer.OpenDatabase

Sub **OpenDatabase()**

Open a database

Set Server, Alias and Database first

Example

```
SP.Server := 'local server';
SP.Alias := 'C:\DATA'
SP.Database := 'Professional';
SP.OpenDatabase;
```

See also the example at SimaProServer.CreateProcess

SimaProServer.OpenProject

Sub **OpenProject**(ByVal ProjectName As String, ByVal Password as String)

Open a project

Parameters	Description
ProjectName	Project
Password	Only needed if the project is protected

Example

Open a project

```
SP.OpenProject('Introduction into LCA');
```

SimaProServer.ParamLine

Property **ParamLine**(ByVal ParameterType As TParameterType, ByVal ParameterScope As TParameterScope, ByVal LineNumber As Long) As ParamLine

Read-Only

Parameters	Description
ParameterType	Type of parameter (input or calculated)
ParameterScope	Scope of parameter (project or database)
LineNumber	Linenummer (zerobase) must be less than ParamLineCount

See process.Paramline and Paramlinecount for an example.

SimaProServer.ParamLineCount

Property **ParamLineCount**(ByVal ParameterType As TParameterType, ByVal ParameterScope As TParameterScope) As Long

Read-Only

Parameters	Description
ParameterType	Type of parameter (input or calculated)
ParameterScope	Scope of parameter (psProject or psDatabase)

For psProject a project must be open.

Returns number of parameters

See process.Paramline and Paramlinecount for an example.

SimaProServer.Product

Property **Product**(ByVal I As Long) As Process

Returns the process directly addressed by an index (see ProductCount)

Member of **SimaProServer**

Read-Only

Parameters	Description
I	Index of product

Gives direct access to the product listed with productname.

SimaProServer.ProductCategoryPath

Property **ProductCategoryPath**(ByVal I As Long) As String

Returns the complete category addressed by an index

Read-Only

Parameters	Description
I	Index

SimaProServer.ProductCount

Property **ProductCount** As Integer

Number of processes and product-stages in the currently open project and selected libraries

Read-Only

SimaProServer.ProductName

Property **ProductName**(ByVal I As Integer) As String

Name of a product

Read-Only

Parameters	Description
I	Index

Used for listing data

SimaProServer.ProductProcessType

Property **ProductProcessType**(ByVal I As Integer) As TProcessType

Process type of a product

Read-Only

Parameters	Description
------------	-------------

I	Index
---	-------

[SimaProServer.ProductProcessTypeName](#)

Property **ProductProcessTypeName**(ByVal I As Integer) As String

Description of the process type of a product

Read-Only

Parameters	Description
------------	-------------

I	Index
---	-------

[SimaProServer.ProductProjectName](#)

Property **ProductProjectName**(ByVal I As Integer) As String

Name of the project of a product

Read-Only

Parameters	Description
------------	-------------

I	Index
---	-------

[SimaProServer.ProductUnitName](#)

Property **ProductUnitName** (ByVal I As Integer) As String

Name of the project of a unit

Read-Only

Parameters	Description
------------	-------------

I	Index
---	-------

[SimaProServer.ProductQuantityName](#)

Property **ProductQuantityName** (ByVal I As Integer) As String

Name of the project of a quantity

Read-Only

Parameters	Description
------------	-------------

I	Index
---	-------

[SimaProServer.ProjectOpen](#)

Property **ProjectOpen** As Boolean

Indicates if a project is currently open

Read-Only

[SimaProServer.Projects](#)

Property **Projects** As IStrings

List of available projects, open database and log in first

Read-Only

[SimaProServer.QuantityCount](#)

Property **QuantityCount** As Integer
 Number of quantities
 Read-Only

[SimaProServer.QuantityName](#)

Property **QuantityName**(ByVal I As Integer) As String
 Name of a quantity
 Read-Only

Parameters	Description
I	Index

Listing the quantities in the database.

[SimaProServer.ResultCount](#)

Property **ResultCount**(ByVal ResultType As TResultType) As Integer
 Number of indicators
 Read-Only

Parameters	Description
ResultType	rtCharacterisation etc,

[SimaProServer.ResultIndicatorName](#)

Property **ResultIndicatorName**(ByVal ResultType As TResultType, ByVal I As Integer) As String
 Name of an indicator
 Read-Only

Parameters	Description
ResultType	rtCharacterisation etc
I	Index

[SimaProServer.ResultMainCompartmentName](#)

Property **ResultMainCompartmentName**(ByVal I As Integer) As String
 Name of the main-compartment of a substance
 Read-Only

Parameters	Description
I	Index

[SimaProServer.ResultSubCompartmentName](#)

Property **ResultSubCompartmentName**(ByVal I As Integer) As String
 Name of the sub-compartment of a substance
 Read-Only

Parameters	Description
I	Index

[SimaProServer.SaveParameters](#)

Sub **SaveParameters**()
 Saving the changes in the parameters on database and project level

[SimaProServer.Server](#)

Property **Server** As String
 Currently used server, e.g. 'local server' or 'myserver@w.p1.local'

[SimaProServer.Servers](#)

Property **Servers** As IStrings
 List of available servers
 Read-Only

[SimaProServer.SubCompartmentCount](#)

Property **SubCompartmentCount**(ByVal MainCompartmentName As String) As Integer
 Number of sub-compartments
 Read-Only

Parameters	Description
MainCompartmentName	Name of main compartment

[SimaProServer.SubCompartmentName](#)

Property **SubCompartmentName**(ByVal MainCompartmentName As String, ByVal I As Integer) As String
 Name of a sub-compartment
 Read-Only

Parameters	Description
MainCompartmentName	name of maincompartment
I	Index

[SimaProServer.SubstanceCASNumber](#)

Property **SubstanceCASNumber**(ByVal MainCompartmentName As String, ByVal I As Integer) As String
 CAS number of a substance
 Read-Only

Parameters	Description
MainCompartmentName	Maincompartment ('Air', 'Water', etc)
I	Index

Meant for listing the substances. Addressing with index.

Example

See FindSubstance

[SimaProServer.Substance](#)

Property **Substance**(ByVal MainCompartmentName As String, ByVal I As Long) As Substance

Return a substance object addressed by an index (see SubstanceCount)

Read-Only

Parameters	Description
MainCompartmentName	Maincompartment
I	Index

[SimaProServer.SubstanceCount](#)

Property **SubstanceCount**(ByVal MainCompartmentName As String) As Integer

Number of substances

Read-Only

Parameters	Description
MainCompartmentName	Maincompartment ('Air', 'Water', etc))

Meant for listing the Substances.

Example

List all substances

```
For I := 0 to SimaPro.SubstanceCount('Air') - 1 do
    print SimaPro.SubstanceName('Air', I);
```

[SimaProServer.SubstanceDefaultUnit](#)

Property **SubstanceDefaultUnit**(ByVal MainCompartmentName As String, ByVal I As Integer) As String

Default unit of a substance

Read-Only

Parameters	Description
MainCompartmentName	Maincompartment ('Air', 'Water', etc))
I	Index

Meant for listing the substances. Addressing with index.

[SimaProServer.SubstanceName](#)

Property **SubstanceName**(ByVal MainCompartmentName As String, ByVal I As Integer) As String

Name of a substance

Read-Only

Parameters	Description
MainCompartmentName	Maincompartment ('Air', 'Water', etc))
I	Index

Meant for listing the substances. Addressing with index.

Example

List all substances

```
For I := 0 to SimaPro.SubstanceCount('Air') - 1 do
  print SimaPro.SubstanceName('Air', I);
```

SimaProServer.Tree

Function **Tree**(ByVal ProjectName As String, ByVal ProcessType As TProcessType, ByVal ProductName As String, ByVal MethodProjectName As String, ByVal MethodName As String, ByVal NWSetName As String) As Boolean

Perform the tree function for a process or product stage

Parameters	Description
ProjectName	Name of project
ProcessType	ProcessType (ptMaterial, ptEnergy, etc)
ProductName	Name of product
MethodProjectName	Name of project where methods is stored (often 'methods')
MethodName	Name of method
NWSetName	Name of normalisation weighting set

Return value

Returns Boolean

SimaProServer.TreeCalcScore

Function **TreeCalcScore**(ByVal ResultType As TResultType, ByVal Param1 As String, ByVal Param2 As String, ByVal Param3 As String) As Boolean

Calculates the node and flow scores of a tree

Member of **SimaProServer**

Parameters	Description		
ResultType	Param1	Param2	Param3
rtCharacterisation	Impact Category	-	-
rtDamage	Damage Category	-	-
rtNormalisation	Damage Category or Impact Category	-	-
rtWeighting	Damage Category or Impact Category	-	-
rtSingleScore	-	-	-
rtInventory	MainCompartment	Subcompartment	SubstanceName

Return value

Returns Boolean

[SimaProServer.TreeChildNodeCount](#)

Property **TreeChildNodeCount**(ByVal NodeIndex As Integer) As Integer
 Number of child nodes of a tree node
 Member of **SimaProServer**
 Read-Only

Parameters	Description
NodeIndex	Node index

[SimaProServer.TreeChildNodeIndex](#)

Property **TreeChildNodeIndex**(ByVal NodeIndex As Integer, ByVal FlowIndex As Integer) As Integer
 Index of a child node of a tree node
 Member of **SimaProServer**
 Read-Only

Parameters	Description
NodeIndex	Nodeindex
FlowIndex	Flowindex

[SimaProServer.TreeNodeCount](#)

Property **TreeNodeCount** As Integer
 Number of nodes in the tree
 Member of **SimaProServer**
 Read-Only

[SimaProServer.TreeProductName](#)

Property **TreeProductName**(ByVal NodeIndex As Integer) As String
 Product name of a tree node
 Member of **SimaProServer**
 Read-Only

Parameters	Description
NodeIndex	Nodeindex (refers to list of Nodes of network or tree)

[SimaProServer.TreeResult](#)

Function **TreeResult**(ByVal NodeResultType As TNodeResultType, ByVal NodeIndex As Integer) As SimaProTreeResult
 Retrieve the data of a tree node
 Member of **SimaProServer**

Parameters	Description
NodeResultType	nrProductAmount, nrIndicatorContribution, nrIndicatorTotal, nrFlowIndicator
NodeIndex	Nodeindex (refers to list of Nodes of network or tree)

Return value
 Returns **SimaProTreeResult**

[SimaProServer.TreeTopNodeIndex](#)

Property **TreeTopNodeIndex** As Integer

Index of the top node of the tree

Member of **SimaProServer**

Read-Only

[SimaProServer.UnitCount](#)

Property **UnitCount**(ByVal QuantityName As String) As Integer

Number of units per quantity

Member of **SimaProServer**

Read-Only

Parameters	Description
------------	-------------

QuantityName	Quantity
---------------------	----------

Example

Number of 'Mass' units

```
for I := 0 to Sp.unitCount('Mass') - 1 do
    print Sp.UnitName('Mass', I);
```

[SimaProServer.UnitDefault](#)

Property **UnitDefault**(ByVal QuantityName As String) As String

Default unit of a quantity (factor = 1)

Member of **SimaProServer**

Read-Only

Parameters	Description
------------	-------------

QuantityName	Quantity ('Mass', 'Volume' etc)
---------------------	---------------------------------

[SimaProServer.UnitFactor](#)

Property **UnitFactor**(ByVal QuantityName As String, ByVal I As Integer) As Double

Factor of a unit

Member of **SimaProServer**

Read-Only

Parameters	Description
------------	-------------

QuantityName	Quantity ('Mass', 'Volume' etc)
---------------------	---------------------------------

I	Index
----------	-------

[SimaProServer.UnitMetric](#)

Property **UnitMetric**(ByVal QuantityName As String, ByVal I As Integer) As Boolean

Indicates if a unit is metric

Member of **SimaProServer**

Read-Only

Parameters	Description
------------	-------------

QuantityName	Quantity ('Mass', 'Volume' etc)
---------------------	---------------------------------

I	Index
----------	-------

[SimaProServer.UnitName](#)

Property **UnitName**(ByVal QuantityName As String, ByVal I As Integer) As String

Name of a unit

Member of **SimaProServer**

Read-Only

Parameters	Description
QuantityName	Quantity ('Mass', 'Volume' etc)
I	Index

Example

Number of 'Mass' units

```
for I := 0 to Sp.unitCount('Mass') - 1 do
    print Sp.UnitName('Mass', I);
```

[SimaProServer.WasteTypeCount](#)

Property **WasteTypeCount** As Integer

Number of waste-types

Member of **SimaProServer**

Read-Only

[SimaProServer.WasteTypeName](#)

Property **WasteTypeName**(ByVal I As Integer) As String

Name of a waste-type

Member of **SimaProServer**

Read-Only

Parameters	Description
I	Index

5.1.23 SimaProTreeResult

Class **SimaProTreeResult**

Object containing tree flows resulting from the calculation of a process object.

[SimaProTreeResult.Amount](#)

Property **Amount** As Double

Amount of the product

[SimaProTreeResult.ProductName](#)

Property **ProductName** As String

Name of the product

[SimaProTreeResult.UnitName](#)

Property **UnitName** As String

Unit of the amount

Member of **SimaProTreeResult**

[SimaProTreeResult.Valid](#)

Property **Valid** As Boolean

Indicates if the node is part of the tree

5.1.24 StandardDeviation Property

Select one of the available subtopics below to see detailed help on **StandardDeviation** property

Object	Property description
ParamLine	Standard deviation of the input parameter
ProcessLine	Standard deviation of amount

5.1.25 SubCompartmentName Property

Select one of the available subtopics below to see detailed help on **SubCompartmentName** property

Object	Property description
SimaProAnalyseResult	
SimaProServer	Name of a sub-compartment

5.1.26 Substance

Class **Substance**

Represents a substance in SimaPro. Use to edit, find or use substances.

[Substance.Cancel](#)

Sub **Cancel()**

Cancel edit mode and returns to read mode

[Substance.CASnumber](#)

Property **CASNumber** As String

CAS number

Example

```
Substance.Casnumber := '45-32-45'
```

[Substance.Comment](#)

Property **Comment** As IStrings

Comment

[Substance.DefaultUnit](#)

Property **DefaultUnit** As String

Default unit, defines also the quantity

[Substance.Edit](#)

Sub **Edit()**

Set the object in edit mode

Substance.MainCompartment

Property **MainCompartment** As String

Main compartment (e.g. 'Airborne emission')

Read-Only

Substance.Mode

Property **Mode** As String

Mode of the object, can be: Read, New or Edit

Read-Only

Substance.Name

Property **Name** As String

Name of the substance (e.g. 'Carbon dioxide')

Substance.Update

Sub **Update()**

Store the data of the object in the database and switch to read mode

Example

Create a new substance

```
SimaPro.CreateSubstance('Air', Substance)
Substance.Name := 'My new substance'
Substance.UnitName := 'kg';
Substance.Update; // save in database
```

5.1.27 UnitName Property

Select one of the available subtopics below to see detailed help on **UnitName** property

Object	Property description
ProcessLine	Name of the unit of amount
SimaProAnalyseResult	Unit (e.g. kg, m3)
SimaProNetworkResult	Unit of the amount
SimaProServer	Name of a unit
SimaProTreeResult	Unit of the amount

5.1.28 Update Method

Select one of the available subtopics below to see detailed help on **Update** method

Object	Method description
Process	Store the data of the object in the database and switch to read mode
Substance	Store the data of the object in the database and switch to read mode

5.2 License functions & properties

5.2.1 SimaProServer.ActivateAuto

Function `ActivateAuto()` As `TLicenseStatus`

Contacts the PRé activation server to perform an automated activation. The easiest way to activate if you have a direct connection to internet.

Parameters	Description
Return value	Returns <code>IsLicenseAlreadyActivated</code> or result of <code>SimaProServer.LicenseStatus</code>

5.2.2 SimaProServer.ActivateBrowser

Property `ActivateBrowser` As `String`

Returns the URL on which activation can be done manually.

Member of `SimaProServer`

```
try
{
    textBlock1.Text += "BrowserActivation: " + SP1.ActivateBrowser + "\r\n";
}
catch (Exception u)
{
    textBlock1.Text += "Exception BrowserActivation: " + u.Message + "\r\n";
}
```

5.2.3 SimaProServer.ActivateEmailAddress

Property `ActivateEmailAddress` As `String`

The email address to which you can send your activation request

Member of `SimaProServer`

Example

```
try
{
    textBlock1.Text += "ActivateEmail: " + SP1.ActivateEmailAddress + "\r\n";
}
catch (Exception u)
{
    textBlock1.Text += "Exception ActivateEmail: " + u.Message + "\r\n";
}
```

5.2.4 SimaProServer.ActivateEmailBody

Property `ActivateEmailBody` As `String`

The email body to use when you can send your activation request by mail

Member of `SimaProServer`

5.2.5 SimaProServer.ActivateEmailSubject

Property `ActivateEmailSubject` As `String`

The email subject used to send your activation request by mail

Member of `SimaProServer`

5.2.6 SimaProServer.ActivateMachineID

Property `ActivateMachineID` As `String`

The `MachineID` on which you'll want to activate your license (needed for web, and email activation)

Member of `SimaProServer`

```
try
```

```

{
    textBlock1.Text += "BrowserActivation: " + SP1.ActivateMachineID+ "\r\n";
}
catch (Exception u)
{
    textBlock1.Text += "Exception ActivateMachineID: " + u.Message + "\r\n";
}

```

5.2.7 SimaProServer.ActivateLicense

Function ActivateLicense(ByVal ActivationCode As String) As TLicenseStatus

Checks to see if ActivationCode parameters contain correct code, and if so, will activate the license.

Parameters	Description
ActivationCode	The activationcode as a string
Return value	IsActivated, IsWrongActivationCode, IsNotRegistered

5.2.8 SimaProServer.DeactivateLicense

Function DeactivateLicense() As Licensestatus

Deactivates the license on the Pre server and on the machine.

Parameters	Description
Return value	IsDeactivated , IsNotRegistered,

5.2.9 SimaProServer.ExpirationDate (obsolete)

This function is replaced by SimaProServer.LicenseExpireDate

Property **ExpirationDate** As Date

5.2.10 SimaProServer.IsActivated (obsolete)

This function is replaced by SimaProServer.Licensestatus

Property **IsActivated** As TLicenseStatus

Returns the license status whether current license is activated or not

5.2.11 SimaProServer.IsRegistered (obsolete)

This function is replaced by SimaProServer.Licensestatus

Property **IsRegistered** As TLicenseStatus

Returns the license status, based on whether current license is activated or not

Parameters	Description
Return value	IsNoLicense, IsLicenseExpired, IsNoLicenseForCom, IsRegistered, IsNotRegistered

5.2.12 SimaProServer.IsReleaseAllowed

Function ActivateLicense(ByVal Product as TSoftwareProduct, ReleaseDate as Date) As Boolean

Checks to see if the service contract was active at the requested date.

Parameters	Description
Product	The requested product
ReleaseDate	Releasedate of product
Return value	True/ False

5.2.13 SimaProServer.IsSingleUser

Property **IsSingleUser** As Boolean

Returns False if a valid multiuser license is active or expired. Otherwise it returns True

5.2.14 SimaProServer.LicenseExpireDate

Function ActivateLicense(ByVal Product as TSoftwareProduct) As Date

Get the expiry date of license of requested product.

Parameters	Description
Product	The requested product
Return value	Expiredate

5.2.15 SimaProServer.LicenseType

Property **LicenseType** As String

Returns 'Indefinite' / 'Subscription' / 'Unknown'

5.2.16 SimaProServer.LicenseStatus

Function ActivateLicense(ByVal Product as TSoftwareProduct) As TLicenseSatatus

Get the current licence status of requested product.

Parameters	Description
Product	The requested product
Return value	IsLicenseExpired/ IsActivatedWithService/ IsActivatedNoService/ IsDemoMode/ IsDemoExpired/ IsRegistered/ IsNoLicense

5.2.17 SimaProServer.RegisterLicense

Function RegisterLicense (ByVal LicenseCode As string, ByVal RegistrationName As string) As TLicenseStatus

Registers the license.

Parameters	Description
LicenseCode	Licensecode as a string
RegistrationName	Registration name as a string
Return value	IsRegistered, IsRegistrationFileError, IsLicenseExpired, IsNotRegistered

5.2.18 SimaProServer.RegistrationCode

Property **RegistrationCode** As String

Returns a string with the first row of the registration code

5.2.19 SimaProServer.RegistrationName

Property **RegistrationName** As String

Returns a string with the name used for the registration code

5.2.20 SimaProServer.ServerVersion

Property **ServerVersion** As String

Returns: Textual presentation of the current SimaPro software version.

5.2.21 SimaProServer.ServiceEndDate

Function ServiceEndDate (ByVal Product as TSoftwareProduct) As Date

Get the expiration date of the service contract belonging to the license of requested product.

Parameters	Description
Product	The requested product
Return value	Expiry date

5.2.22 SimaProServer.SimaProVersion

Property **SimaProVersion** As String

Returns: 'Compact'/ 'Analyst'/ 'Developer'/ 'Faculty'/ 'Classroom'/ 'PhD'/ 'No license found'

5.2.23 SimaProServer.SupportInfo

Property **SupportInfo** As String

Returns a string with text which can be used as body of a support request mail.

5.3 Enumerated types

5.3.1 TDistribution

Enum TDistribution

Constant	Value	Description
dsUndefined	0	Distribution is not defined
dsLogNormal	1	Lognormal
dsNormal	2	Normal (Gaussian)
dsTriangle	3	Triangle
dsUniform	4	Uniform

5.3.2 TLicenseStatus

Constant	Value	Description
IsRegistered	0	Registered, not activated
IsActivated	1	Activated
IsNoLicense	2	No license registered
IsLicenseExpired	3	Temporary license is currently expired
IsOnlySingleUserLicenseAllowed	4	Registration attempt failed; Multi-user licenses can't be used when installed as single user
IsOnlyMulitUserLicenseAllowed	5	Registration attempt failed; Single-user licenses can't be used when installed as multi user
IsActivationServerUnavailable	6	Activation attempt failed, activationserver unavailable
IsActivationLimitReached	7	Activation attempt failed, no more activations for this license
IsNotActivated	8	Activation status (obsolete)
IsNotRegistered	9	Registration status
IsBlackListed	10	Activation attempt failed, license is blacklisted by Pre consultants
IsValidationConnectionError	11	
IsInvalidActivationKey	12	Obsolete

IsLicenseAlreadyActivated	13	Attempt to enter activation key failed; Already activated
IsDeactivated	14	Request to deactivate was succesfull
IsDeactivationLimitReached	15	Activation attempt failed, Too many deactivations have taken place last weeks
IsNoLicenseForCom	16	The licensed COM-functions are not available
IsRegistrationFileError	17	Failed to create licensefile for registrationcode
IsRegisteredAsDemo	18	Simapro is running with an expired license with demo limitations
IsUnknownStatus	19	If some unforeseen problems in the licensesystem of Simapro occurs, this value might be returned
IsWrongActivationCode	20	Attempt to enter activation key failed;Invalid activationkey
IsActivatedWithService	21	Simapro license is currently active, and within servicecontract period (temporary or indefinite in servicecontract period)
IsActivatedNoService	22	Simapro license is currently active, and outside servicecontract period (indefinite license)
IsDemoMode	23	Simapro is running without license with demo limitations
IsDemoExpired	24	

5.3.3 TNodeResultType

Enum TNodeResultType

Type of result from a network or tree node

Constant	Value	Description
nrProductAmount	0	Amount of a product
nrIndicatorContribution	1	Contribution of a product to the selected indicator
nrIndicatorTotal	2	Contribution of a product including all sub-processes to the selected indicator
nrFlowIndicator	3	Contribution of a flow to the selected indicator

5.3.4 TParameterType

Enum TParameterType

Constant	Value	Description
ptInputParameter	0	Parameter is a constant value optional with distribution data
ptCalculatedParameter	1	Parameter is an expression

5.3.5 TProcessPart

Enum TProcessPart

Parts of a process

Constant	Value	Description
ppProducts	0	Products (outputs)
ppMaterialsFuels	1	Inputs from technosphere (other processes)
ppElectricityHeat	2	Inputs from technosphere (other processes)
ppAvoidedProducts	3	Avoided product
ppWasteToTreatment	4	Waste
ppRawMaterials	5	Use of resources (raw materials)
ppAirborneEmissions	6	Emissions to air

ppWaterborneEmissions	7	Emissions to water
ppFinalWasteFlows	8	Emissions to waste
ppEmissionsToSoil	9	Emissions to soil
ppNonMaterialEmissions	10	Non material emissions
ppSocialIssues	11	Social issues
ppEconomicIssues	12	Economic issues
ppSpecificWaste	13	Outputs to specific waste
ppRemainingWaste	14	Remaining waste
ppSubAssembly	15	Subassembly (product stages only)
ppReferencedAssembly	16	Referenced assembly (product stages only)
ppAssembliesAndMaterials	17	Assemblies or materials (product stages only)
ppProcesses	18	Process (product stages only)
ppWasteScenarios	19	Waste scenario (product stages only)
ppDisposalScenarios	20	Disposal scenario (product stages only)
ppAdditionalLifeCycles	21	Additional life cycle (Life cycle product stage only)
ppDisassemblies	22	Disassembly (product stages only)
ppReuses	23	Reuse (product stages only)
ppWasteOrDisposalScenario	24	Waste or disposal scenario (product stages only)

5.3.6 TProcessStatus

Enum TProcessStatus

Constant	Value	Description
stEmpty	0	No status
stTemporary	1	Temporary process
stDraft	2	Draft, work to be done
stToBeRevised	3	To be revised
stToBeReviewed	4	To be reviewed
stFinished	5	Finished

5.3.7 TProcessType

Enum TProcessType

Constant	Value	Description
ptMaterial	0	Material process
ptEnergy	1	Energy Process
ptTransport	2	Transport process
ptProcessing	3	Processing process
ptUse	4	Use process
ptWasteScenario	5	Waste scenario
ptWasteTreatment	6	Waste treatment
ptAssembly	7	Assembly product stage
ptLifeCycle	8	Life cycle product stage

ptDisposalScenario	9	Disposal scenario
ptDisassembly	10	Disassembly
ptReuse	11	Reuse

5.3.8 TResultType

Enum TResultType

Type of result

Constant	Value	Description
rtCharacterisation	0	Characterisation score
rtDamage	1	Damage score
rtNormalisation	2	Normalised score
rtWeighting	3	Weighted score
rtSingleScore	4	Single score
rtInventory	5	Inventory results (LCI)

5.3.9 TSoftwareProduct

Constant	Value	Description
spSimaPro	0	The SimaPro application
spCOM	1	The COM-interface of SimaPro