



IFP Unit Operation Wizard

CO-LaN Annual meeting
Cannes 2006



- Motivation
- Wizard description
- Demonstration
- Conclusion

- Experiment shows that
 - New technology is sometime disturbing
 - Potential users are afraid of reading specifications
 - If they manage to read the full documents they do not know how to start
 - Samples are useful but starting from scratch is crippling especially when dealing with C++ and COM technology
 - VARIANT, BSTR, Safearray and even pointers manipulation are the nightmare of non specialist

- This wizard has been developed for internal use in order to
 - Quickly and simply provide to the end users with a simple framework
 - Reading the full specification is therefore not needed !
 - Provide intuitive functions to access a Material Object
 - Provide robust and efficient conversion functions for VARIANT, SafeArray, BSTR,



Wizard description

- At a user chosen location, a setup program installs the following directories and files

Nom	Taille	Type
Bin		Dossier de fichiers
Common		Dossier de fichiers
doc		Dossier de fichiers
IDL		Dossier de fichiers
Install		Dossier de fichiers
Lib		Dossier de fichiers
TLB		Dossier de fichiers
IFPUnitWizard.exe	428 Ko	Application
unins000.dat	5 Ko	Fichier DAT
unins000.exe	31 Ko	Application
UIIDGEN.EXE	39 Ko	Application

Nom	Taille	Type
ArrayParameterSpec.dll	124 Ko	Extension de l'applic...
collection.dll	128 Ko	Extension de l'applic...
GUIDGen.dll		
IntegerParameterSpec.dll		
MaterialObject.dll		
OptionParameterSpec.dll		
Parameter.dll		
Port.dll		
RealParameterSpec.dll		

Nom	Taille	Type
TNT		Dossier de fichiers
CCapeError.h	6 Ko	C/C++ Header
CCOWRAPPER.h	13 Ko	C/C++ Header
CDATAPACK.h	4 Ko	C/C++ Header
Constants.h	1 Ko	C/C++ Header
CRegisterInformation.h	3 Ko	C/C++ Header
CSafeArrayUtils.h	3 Ko	C/C++ Header
CSTLCOMConvert.h	6 Ko	C/C++ Header
CString.h	3 Ko	C/C++ Header
IFP.ico	1 Ko	Icône
IFPDefinition.h	50 Ko	C/C++ Header
IFPDefinition_i.c	3 Ko	C Source

Nom	Taille	Type
CAPE-OPENv1-0-0.tlb	88 Ko	Type Library

Nom	Taille	Type
CAPE-OPENv1-0-0.tlb	88 Ko	Type Library
UtilLib.lib	597 Ko	Fichier LIB
UtilLibd.lib	1 526 Ko	Fichier LIB

Nom	Taille	Type
COMPIL32.EXE	113 Ko	Application
ISE.EXE	862 Ko	Application
ISETUP.CNT	1 Ko	Help Contents File
ISETUP.GID	11 Ko	Fichier GID
ISETUP.HLP	50 Ko	Fichier d'aide
ISSCONV.EXE	37 Ko	Application
SETUP.E32	139 Ko	Fichier E32
SETUPLDR.E32	32 Ko	Fichier E32
UNINS000.DAT	3 Ko	Fichier DAT
UNINS000.EXE	31 Ko	Application
UNINST0.000	42 Ko	Fichier 000
UNINST1.000	1 Ko	Fichier 000
UNINST.E32	31 Ko	Fichier E32

Nom	Taille	Type
Dynamic.idl	5 Ko	Object Definition La...
IFPUnit.idl	1 Ko	Object Definition La...

Nom	Taille	Type
DOxygen_Generated_Doc.zip	535 Ko	WinZip File
Error_Common_Interface.pdf	323 Ko	Document Adobe A...
UNITSpec.zip	1 299 Ko	WinZip File



Wizard description

Directory where wizard has been installed

New value provided each time wizard starts

User descriptions

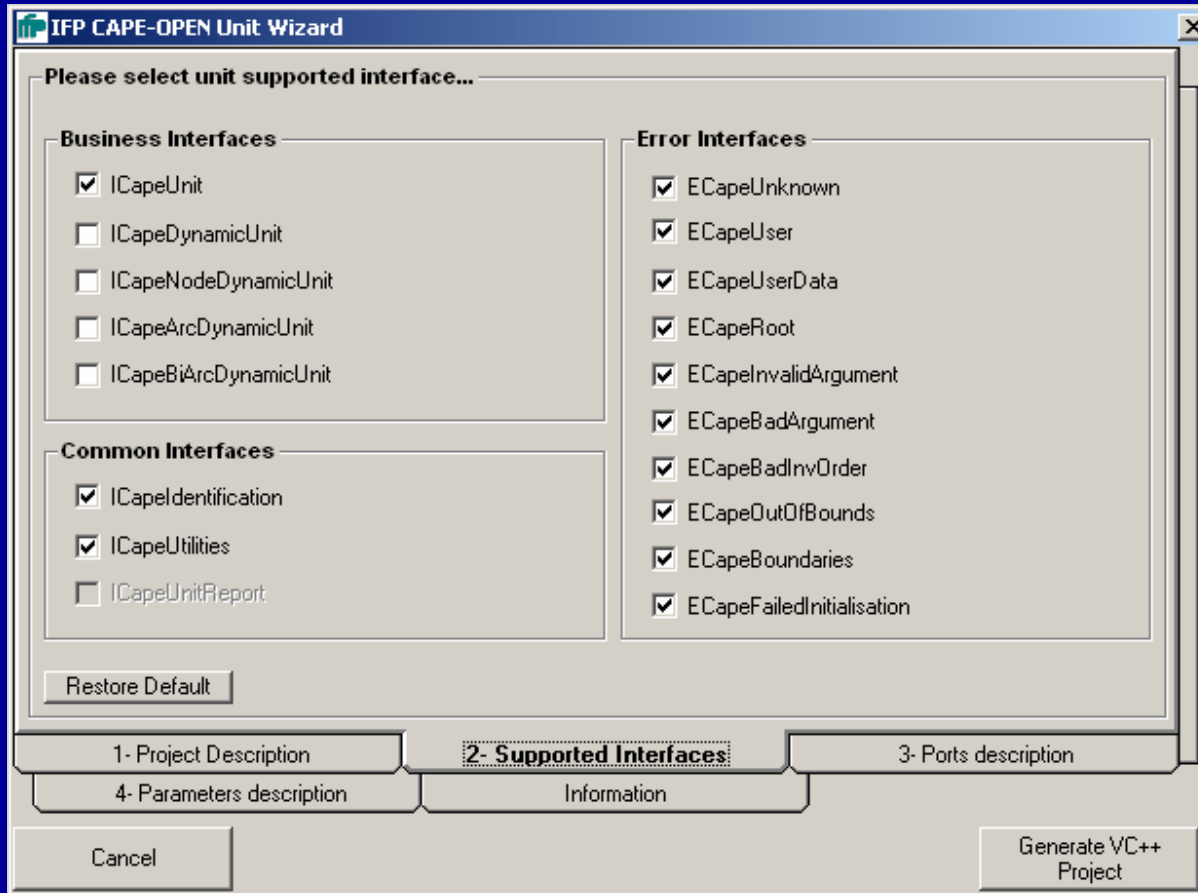
Project Location	D:\IFP CAPE-OPEN\
Unit CLSID	{65BAC205-ACDE-4B8C-AB91-59A14AF81FCC}
Lib CLSID	{B13CEA23-FB9E-4E67-B105-398DA789E2FE}
Unit Name	
Unit Description	
Unit Version	1.0.0
CAPE-OPEN Version	1.0
Unit help URL	<none>
Vendor URL	http:\\www.ifp.fr
About	For any information please contact support....

1- Project Description | 2- Supported Interfaces | 3- Ports description | 4- Parameters description | Information

Cancel | Generate VC++ Project



Wizard description



User selects interfaces to be supported

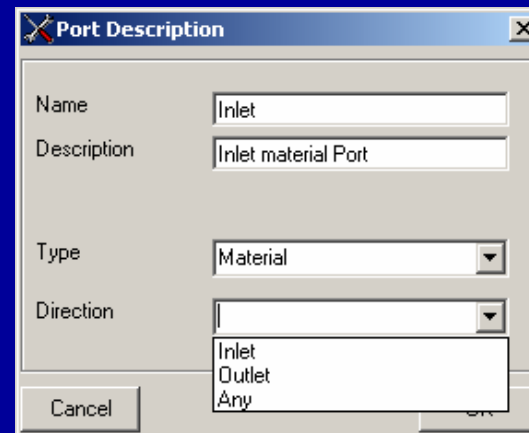
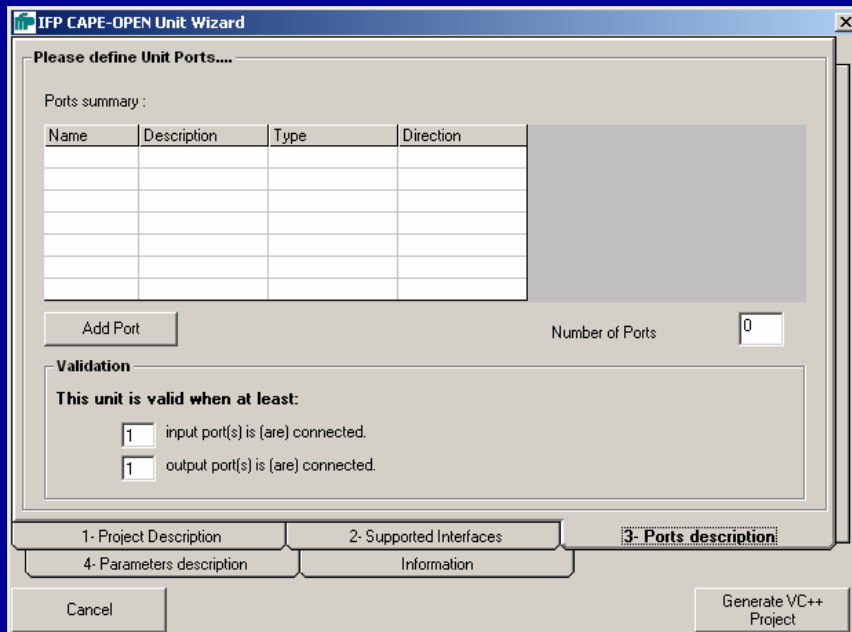
Warning: no consistency test on interfaces is performed



Wizard description

User has to define port using 

User may specify the minimum number of input and output ports that must be connected

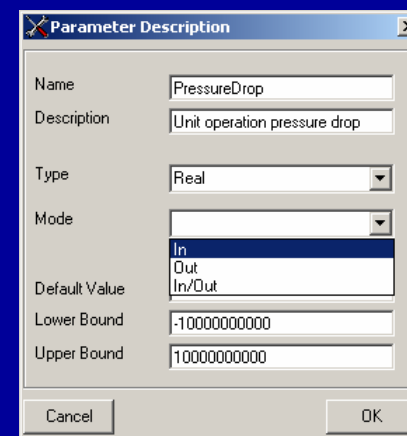
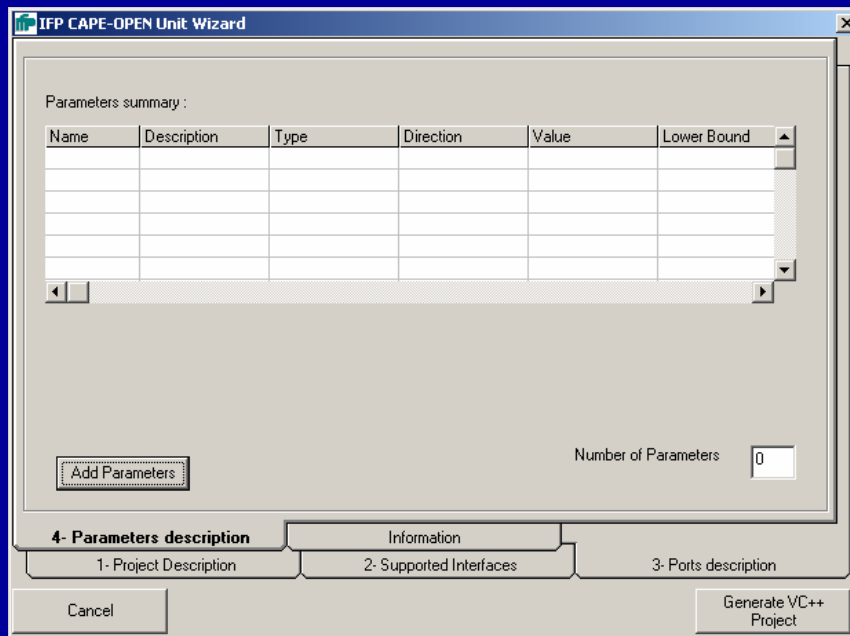


User has to define parameters using



Parameters are defined with a type, a mode, a default value and a validity range

Array parameters are not managed though the wizard



```

Mixer classes
{
    mCOError      =      new CCapeError(ECapeUnknownHR,L"ICapeUnit",L"Calculate",L"cannot g
    return ECapeUnknownHR;
}

// Get data on INPUT MO
double inputPressure      =      CCOWRAPPER::GetMOPressure(pMOINPUT);
double inputTemperature   =      CCOWRAPPER::GetMOTemperature(pMOINPUT);
double inputEnthalpy     =      CCOWRAPPER::GetMOMassEnthalpy(pMOINPUT);
m_flow                   =      CCOWRAPPER::GetMOMassFlow(pMOINPUT);
Array1D<double> comp     =      CCOWRAPPER::GetMOMassComposition(pMOINPUT);

double outputPressure     =      0.;
double outputEnthalpy    =      0.;

try
{
    //TO DO: ADD YOUR IMPLEMENTATION CODE HERE
    outputPressure      =      inputPressure*1.1;
    outputEnthalpy     =      inputEnthalpy;
    // Set data on OUTPUT MO
    CCOWRAPPER::SetMOPressure(pMOOUTPUT,outputPressure);
    CCOWRAPPER::SetMOMassEnthalpy (pMOOUTPUT,outputEnthalpy);
    CCOWRAPPER::SetMOMassFlow(pMOOUTPUT,m_flow);
    CCOWRAPPER::SetMOMassComposition(pMOOUTPUT,comp);
}
catch(...)
{
    mCOError      =      new CCapeError(ECapeUnknownHR,L"ICapeUnit",L"Calculate",L"");
    return ECapeUnknownHR;
}
try
{
    CCOWRAPPER::FlashMOPH(pMOOUTPUT);
}
catch(...)

```

- Institut Français du Pétrole has made available the Wizard to the CO-LaN membership.
 - For the moment the Wizard is available only to the CO-LaN membership.
- IFP will not maintain the Wizard
- IFP is not responsible of any consequence arising from the use of the Wizard.
- Implementation has to follow strict programming rules. Remember that performance is extremely linked to the code quality....