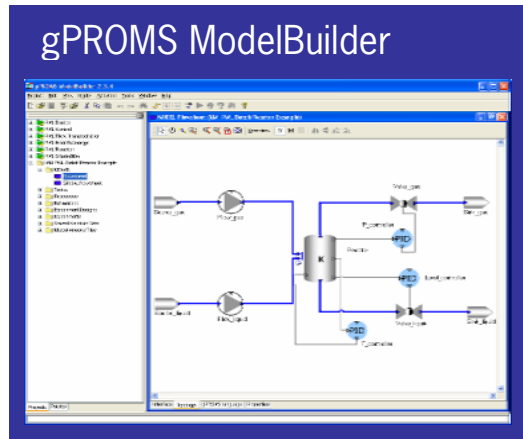




# Using gO:MATLAB – a simple step-by-step guide

**Step 1:** Develop and test the gPROMS model inside the gPROMS ModelBuilder environment.



```

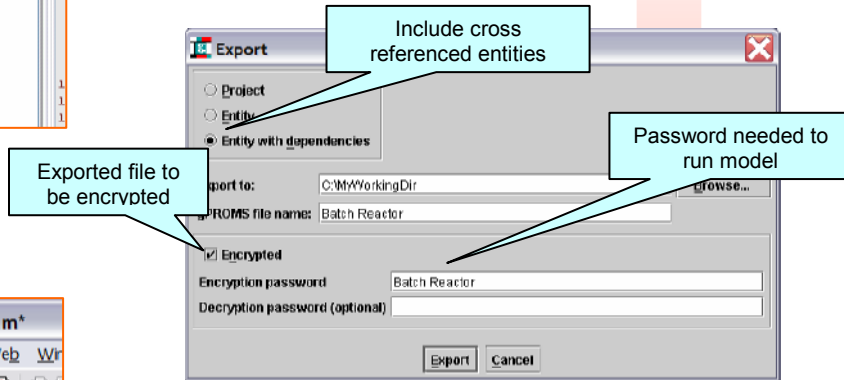
TASK gOMatlab (PML Batch Reactor Example)
1 PARAMETER
2 TheFlowsheet AS MODEL Simple_flowsheet
3
4 SCHEDULE
5 # OperationsSchedule
6 SEQUENCE
7 WHILE True DO
8 SEQUENCE
9 ReadInitialValuesFromMatlab(TheReactor IS TheFl
10 CONTINUE FOR 3*3600
11 SendResultsToMatlab(TheReactor IS TheFlowsheet.
12 END
13 END
14 END
    
```

```

TASK ReadInitialValuesFromMatlab (PML Batch Reac...
1 PARAMETER
2 TheReactor AS MODEL Reactor_drum_kinetic
3 TheController AS MODEL PID_controller
4
5 SCHEDULE
6 RESTART "InitialState"
7 GET
8 TheReactor.Temperature;
9 TheReactor.pressure;
10 TheReactor.HoldUp_Mass(2);
11 TheReactor.HoldUp_Mass(3);
12
    
```

**Step 2:** Create a gPROMS schedule that periodically exchanges relevant data between gPROMS and MATLAB.

**Step 3:** Export the model gPROMS model



Exported file to be encrypted

Include cross referenced entities

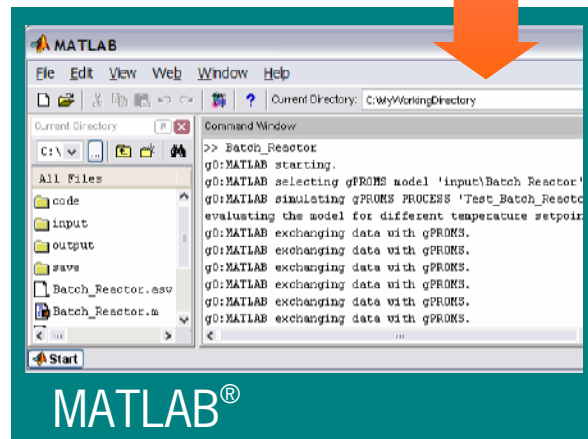
Password needed to run model

```

C:\MyWorkingDirectory\Batch_Reactor.m*
File Edit View Text Debug Breakpoints Web Wr
4- gOMatlab('startONLY');
5- gOMatlab('select', 'Batch Reactor', 'Batch Re
6- gOMatlab('simulate', 'Test_Batch_Reactor_gOMa
7
8- no_experiments = 25;
9- result_size = 8;
10- result_matrix = zeros(no_experiments, 1 + re
11- concentration_default = 0.5;
12- feed_default = 1;
13
14- disp('evaluating the model for different temp
15- for i=1:no_experiments
16
17- Temperature = 533.15+i;
18- Pressure = 70.6E5 ;
19- HoldUp = [ 1.0E-003 0 0 0 0.01156014];
20- SetPointTemperature(i) = 533.15+i;
21
22- % gOMatlab
    
```

**Step 4:** Create a MATLAB script file (e.g. cstr.m)

**Step 5:** Execute the gPROMS model from within MATLAB.



## Licensing, supported platforms and pre-requisites

gO:MATLAB is licensed as an optional component of the gPROMS family. A gPROMS ModelBuilder licence is required if you wish to build the gPROMS model that will execute within MATLAB. gO:MATLAB is available on the following platforms: **Microsoft Windows XP, Windows 2000, NT 4.0.**

Pre-requisites are:

- gPROMS ModelBuilder licence for creating models
- Mathworks MATLAB® version 6.5 R13 or later



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