

**Jean NOËL**

**Engineer + PhD (ECL)**, experienced freelance  
 ■ **38 years** of experience in scientific computing  
 ■ **Resume** in [pdf](#) format

**Sought missions**

- Fixed-price missions
- Near Lyon, Paris, Naples, Rome

**Contact**

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**Offer you its services as a freelance consultant, in the following 4 areas :****Scientific coding****Conception/Coding**

- Oriented Object Conception
- C/C++ Coding & Modelica

**Graphic interfaces**

- Visual C++ and MFC
- Dymola & OpenModelica

**Modeling****Modeling** of all thermal system ...

- Building (envelop + systems)
- Glazing with shading devices
- Drying by hot air
- Filtration

**Algorithms writing****Simulations/Calculations****Studies**

- Dynamic Thermal Simulation
- Statistical calculations

**Technology watch****All technology watch on :**

- Systems for building
- Bibliography / all topics

**With the following references :**

Contractant	References
<p style="text-align: center;"><b><u>CETIAT</u></b>            Centre Technique            des Industries Aérauliques et            Thermiques (Villeurbanne, France)</p>	<ul style="list-style-type: none"> <li>■ Development of the '<b>block diagrams</b>' <b>BOOST</b> software (100,000 C++ lines, <a href="#">here</a>, <a href="#">here</a>) for the 0/1D unsteady simulation of systems</li> <li>■ Development in BOOST of <b>Monte-Carlo</b> functionalities, calculation of <b>uncertainties</b> and <b>sensitivity analysis</b> (<b>SOBOL</b>, <b>MORRIS</b>)               <ul style="list-style-type: none"> <li>- Examples of implementation (<a href="#">here</a>, <a href="#">here</a>) and there on the (<a href="#">here</a>, <a href="#">here</a>) on <b>stochastic modeling of drawings</b> in residential</li> </ul> </li> <li>■ Development in BOOST of <b>semi-virtual control/command</b> functionalities for platform management               <ul style="list-style-type: none"> <li>- BOOST / platform coupling via a <b>database</b> (exchange by <b>SQL</b> queries and <b>OCDB</b> protocol)</li> </ul> </li> <li>■ <b>Modeling</b> in BOOST software of :               <ul style="list-style-type: none"> <li>- '<b>building</b>' systems: 'nRmC' building, <b>PAC</b> and CET, boiler, <a href="#">stratified tank</a>, <a href="#">solar collector</a>, recovery of fatal energy in water</li> <li>- '<b>industry</b>' systems: dryer, fibrous filter or adsorption, etc.</li> <li>- <b>condensation/evaporation</b> model for <b>cold coils</b> (water or direct expansion), integration into a <b>CTA</b> model</li> <li>- <b>normative test EN 16147</b> (<a href="#">here</a>) for certification by simulation of PAC+DHW tank ranges (<b>AFNOR reference system NF 414</b>)</li> </ul> </li> <li>■ <b>Modeling</b> under <b>Modelica</b>, in OpenModelica and Dymola</li> </ul>

	<ul style="list-style-type: none"> <li>– <b>Flame temperature</b> from the enthalpy of reactions of type <b>CnHn</b> fuels</li> <li>– <b>Building</b> from the EDF libraries '<b>BuildSysPro</b>' and '<b>ThermoSysPro</b>'</li> <li>■ Development of an <b>encapsulation</b> protocol for models (written in C/C++) in a shared <b>DLL</b></li> <li>– Application to <b>links</b> with <b>Excel</b>, <b>RefProp</b>, <b>TRNSYS</b>, <b>LabView</b>, <b>Matlab</b>, and Modelica tools (<b>AMESim</b>, <b>Dymola</b>, <b>OpenModelica</b>).</li> <li>■ Development of a <b>KALMAN</b> / <a href="#">sequence search</a> filter on dynamic data from a bench of flowmetry (2022)</li> <li>■ Use of <a href="#">KoZiBu</a> in the CETIAT-ADEME project <a href="#">Batindus 2</a> (2019) on the environmental impact of industrial buildings</li> </ul>
<b>Direction Générale de l'Armement</b> (TN-Toulon)	<ul style="list-style-type: none"> <li>■ Services for the <b>department of naval techniques</b> of the DGA (DGA-TN, Toulon, France)</li> <li>■ Continuous development of the <a href="#">KoZiBu</a> software for the simulation of the <b>new generation Barracuda submarine</b> (70 thermal zones), with taking into account airflow exchanges imposed between different zones in the event of an accident.</li> </ul>
<b>Direction Générale de l'Armement</b> (LRBA-Vernon)	<ul style="list-style-type: none"> <li>■ Service for the DGA Ballistics and Aerodynamics Research Laboratory (DGA-LRBA, Vernon, France)</li> <li>■ Development of the <b>RAIMANTA</b> tool for predicting temperatures in military shelters for specifications of missile weapons and development of a graphical interface, see papers <a href="#">2009</a> and <a href="#">2010</a></li> </ul>
<a href="#">Du Pont De Nemours</a> (Luxembourg)	<ul style="list-style-type: none"> <li>■ Development of the first <b>Phase Change Material</b> (PCM) model in a simulation software</li> <li>– First in <a href="#">CoDyMur</a> and <a href="#">CoDyBa</a>, then in <a href="#">KoZiBu</a></li> <li>– Work in collaboration with <a href="#">CETHIL</a>: <a href="#">paper 1</a> (2006) and <a href="#">paper 2</a> (2006)</li> <li>– <a href="#">Numerical study</a> on the use of PCM in renovation (2009)</li> <li>■ Contribution to the development of the DuPont product <b>EnerGain</b>, <a href="#">Cahiers Techniques du Bâtiment n° 323</a>, April 2013</li> </ul>
<a href="#">CETHIL</a> (INSA de Lyon)	<ul style="list-style-type: none"> <li>■ Collaborative work over 10 years for the development of building thermal simulation tools</li> <li>■ Examples of publications : <a href="#">2000</a>, <a href="#">2001a</a>, <a href="#">2001b</a>, <a href="#">2005a</a>, <a href="#">2005b</a>, <a href="#">2006a</a>, <a href="#">2006b</a>, <a href="#">2007</a>, <a href="#">2008</a></li> </ul>
<b>EDF</b> (Renardières-Paris, SEPTEN-Lyon)	<ul style="list-style-type: none"> <li>■ Development of the 1st version of the EDF-SEPTEN COSAQUE code, for CSIngénierie (1990)</li> <li>■ Development of the <a href="#">SYSLEY</a> tool for entering and calculating 2D thermal bridges (1998)</li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>■ Design offices <b>BERIM</b>, <b>THOR Ingénierie</b>, <b>OTH</b> : <b>DTS</b> studies with <a href="#">KoZiBu</a></li> <li>■ <b>Lafarge</b> : software developed to highlight the benefits of concrete based on inertia, insulation, glazed surface, etc. of a building</li> <li>■ <b>Saint-Gobain</b> : study on the modeling of double-skin glazing</li> </ul>
<b>JNLOG</b> (on own funds)	<ul style="list-style-type: none"> <li>■ Development of Dynamic Thermal Simulation software (<b>DTS</b>) <a href="#">KoZiBat</a> (2024-2024) <ul style="list-style-type: none"> <li>– Calculator for determining the heating and air conditioning consumption of a <b>N zones</b> building</li> </ul> </li> <li>■ Development of the Dynamic Thermal Simulation software (<b>DTS</b>) <a href="#">KoZiBu</a> (2010-2024) <ul style="list-style-type: none"> <li>– From the building (envelope + systems), temperature + humidity + energy consumption prediction</li> <li>– Taking into account an unlimited number of parts or thermal zones, 3D visualization in prototype</li> <li>– Validation of KoZiBu on the climatic chamber <a href="#">EMPA</a></li> </ul> </li> <li>■ ADEME project <a href="#">NBDM</a>, for the definition of a common data format / French DTS software (2008)</li> <li>■ Development of a <b>single model</b> (<a href="#">here</a>, <a href="#">here</a>) integrating blind and window (2006)</li> <li>■ <a href="#">KaLiBat</a> : automatic thermal bridge calculation (auto mesh of 2D geometries and calculation of the regulatory coefficient in 1 s)</li> <li>■ <a href="#">KoZiBox</a> : calculator for determining the heating and air conditioning consumption of a 1-zone building</li> <li>■ <a href="#">ArchiCube</a> : 3D thermal calculations</li> </ul>