



HARMONICS – HARMONISED ASSESSMENT OF RELIABILITY OF MODERN NUCLEAR I&C SOFTWARE (2011-2014)

INVITATION TO THE SECOND HARMONICS END USER WORKSHOP

Date April 2-3, 2014 (start at 9:30 April 2nd, finish at 16:00 April 3rd)
Venue EDF Research Centre, 6 quai Watier, 78400 Chatou, France

BACKGROUND

HARMONICS – Harmonised Assessment of Reliability of MODern Nuclear I&C Software – is a four-year Euratom FP7 project that started in January 2011. The overall objective of the HARMONICS project is to ensure that the nuclear industry has well founded and up-to-date methods and data for assessing software of computer-based safety systems. It aims at proposing improved yet realistic and practical approaches for software verification, software safety justification and quantification of software failure rates for I&C systems and software implementing category A functions. For further information, see the HARMONICS webpage: <http://harmonics.vtt.fi>.

Nuclear I&C standards development and harmonisation has been ongoing for over 25 years but different countries still have different requirements for category A I&C systems and software. In the view of the HARMONICS members, harmonisation can only be superficial until we understand and address some of the hard underlying technical issues and provide a justification framework to allow legitimate national differences to be characterised and accommodated. The objective of this second HARMONICS end user workshop is to present the main results of the project regarding software V&V, reliability assessment and safety justification. It is an opportunity to discuss these issues and to take one step forward in this challenging task. Workshop participants are invited to the end user group of HARMONICS to discuss, review and give feedback on the project work.



PRELIMINARY PROGRAMME

Day 1, April 2nd, 2014

- Welcome
- Introduction
 - Overview of the HARMONICS project
 - Objectives of the workshop
 - Overview presentation of HARMONICS approaches and case studies
- How Safety Justification Framework could be used in future projects
- Parallel sessions
 - Safety Justification Framework
 - Confidence in Requirements Specification
 - Public Case Study: Stepwise Shutdown System

Day 2, April 3rd, 2014

- Parallel sessions
 - Formal Software Verification
 - Software complexity analysis
 - Reliability and quantification
- Participants' feedback, discussion on way forward
- End of the Workshop
- Visit of EDF R&D Labs (Optional, 16:00 - 17:30)

VENUE

The workshop venue is the EDF R&D center in Chatou, near Paris, France. See the attached access plan.

REGISTRATION AND ACCOMMODATION

Please fill and send the attached workshop registration form before March 15th. at both addresses:

n.thuy@edf.fr

brigitte.torregrossa@edf.fr

The number of participants is limited to 50.
The workshop is free of charge.

For further information, please contact:
n.thuy@edf.fr, Tel: +33 6 98 20 75 78



03/03/2014

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REGISTRATION FORM

First Name	
Surname	
Organisation	
Address	
Country	
e-mail	
Telephone	
Will attend - April 2nd	Yes - No
Will attend - April 3rd	Yes - No



ACCESS TO THE EDF RESEARCH CENTRE 6, QUAI WATIER, CHATOU, FRANCE

Public transportation from Paris (about 30mn)

If you have a hotel in Paris, the most convenient means to reach the EDF Research Centre in Chatou is to take the subway (Metro) and then the regional trains (RER). The nearest train station is RUEIL MALMAISON on RER line A. Be aware that regular Metro tickets are not valid to RUEIL MALMAISON: you will need a specific RER ticket (that you can buy at any Metro or RER station). Be also aware that only trains going to SAINT GERMAIN EN LAYE will stop at RUEIL MALMAISON: you will need to watch the light signs on the RER platforms.

Once at the RUEIL MALMAISON station, it's a 15 minute walk to our center (see map). There is also a shuttle bus from the RER station to the center, but it runs only at specific hours.

- RER A: Rueil-Malmaison station (westbound trains towards Saint-Germain-en-Laye)
- From the Rueil-Malmaison station, to reach the EDF Research Centre by foot
 - Take exit "Rue des deux gares" at the head of the train station
 - Turn right on "Avenue de Colmar" towards the bridge and Chatou.
 - At the middle of the bridge, turn to the slip road, going to the "île des impressionnistes".
- From the Rueil-Malmaison station, to reach the EDF Research Centre by bus (line E4)
 - Use the exit in the middle of the RER station to reach the bus stop.
 - Time table from the RER station to the EDF Centre: buses at 7:52, 8:06, 8:26, 8:52
 - Time table from the EDF Centre to the RER station: buses at 16:32, 17:02, 17:22, 17:42, 18:02

From the Roissy Charles de Gaulle airport

There are two options:

- **Public transportation:** RER line B (Paris by Train) can take you to the CHATELET LES HALLES station, with a connection to RER line A. You can buy RER tickets from vending machines at the airport, but do not use the yellow machines that sell tickets for long distance trains: use the *Transilien* machines that sell tickets for the Paris area. Expect 1h30 and around 12 euros. You will need a credit card with a microchip and a PIN code.
- **Taxi:** the address of the center is **6, quai Watier, Ile des Impressionnistes, Chatou**. Be aware that rush hour traffic is slow: expect 1 hour and around 60-85 euros (taxi fares are higher at night and during week ends). However, off-peak traffic is not so bad: expect 30 minutes. Be also aware that few parisian taxis accept credit cards.

From the Orly airport (about 1h20)

Take the VAL train to the Antony station. At the Antony station, take RER B to the Châtelet-Halles station (northbound towards Roissy Charles de Gaulle airport), and then follow instructions from Paris.

