

NEA WORKSHOP:
***THE APPLICATION OF REMOTE AND ROBOTIC SYSTEMS
IN NUCLEAR BACK-END ACTIVITIES
- WAY FORWARD IN SYSTEM IMPLEMENTATION***

(Provisional agenda)

Date: 30-31 January 2019 (Optional site tour: 29 January)
Location: CEA Centre, Marcoule, France
Host: CEA
Workshop Chair: Christine GEORGES, CEA, France
Website: <https://www.oecd-nea.org/download/robsysnba/index.html>

Background

As technology continues to advance, robotic systems have been more commonly used in radioactive waste management and nuclear decommissioning. In the last decade, robots with specific capabilities have been operated in harsh radioactive waste management and decommissioning environments, remotely controlled drones equipped with sophisticated sensors have collected detailed site characteristics, or multifunctional robots have achieved safe dismantling and decontamination. Innovative techniques have enabled more cost-effective and safer waste management and nuclear decommissioning.

The purpose of this workshop is, therefore, to open a wide international dialogue to further evaluate the applications of remote and robotic systems in radioactive waste management and decommissioning projects (i.e. the back-end of the nuclear fuel cycle). Through this dialogue, participants will exchange experience, discuss main challenges and lessons learnt, explore how to make strategic, yet effective decisions, as well as discuss feasible international cooperation in support of developing and wider application of robotic technologies in the nuclear back-end.

Scope

The workshop will focus on the technical and non-technical aspects of applying robotic and remote systems in the back-end activities and possible ways of expanding their application.

Aims

- to foster discussions between developers and users of autonomous/semi-autonomous, robotic/remote systems, including potential operators (end-users) of robotic systems in nuclear back-end activities, representatives of safety regulators in decommissioning and radioactive waste management and other interested parties;
- to exchange existing national experience/opinions and examine determining factors that affect the development and implementation of robotic systems in back-end projects;
- to discuss possible joint undertakings/activities that could support and facilitate further implementation of robotic systems in back-end activities.

Attendees

Representatives of R&D organisations, waste management, and decommissioning operators, national decision makers, regulatory bodies and other interested parties are invited to participate in the workshop.

Registration

The registration fee is 200 euros. The registration deadline is 17 December 2018.

Venue

The NEA Workshop will be held in CEA Centre, Marcoule, France.

Technical visit

Workshop participants are invited to participate in a technical visit to the CEA Centre in Marcoule on 29 January 2019. Details about the centre are available on the CEA webpage: <http://marcoule.cea.fr/Marcoule/Pages/English.aspx>

Programme

- Session 0 Opening remarks
- Session 1 The global situation in the development/implementation of remote and robotic systems in various back-end activities including post-accident radioactive waste management and decommissioning
- Session 2 Main factors influencing the implementation of remote and robotic systems in the back end.
- Session 3 International cooperation in the field of development and implementation of remote and robotic systems. Prospects.
- Closing remarks

Programme Committee

| Name | Organisation | Country |
|--------------------|----------------------------------|----------------|
| Christine GEORGES | CEA | France |
| Leonel LAGOS | Florida International University | USA |
| Koji OKAMOTO | IAEA | Japan |
| Rustam STOLKIN | University of Birmingham | UK |
| Viktor VOLKOV | Rosenergoatom | Russia |
| Gloria KWONG | NEA | |
| Vladimir LEBEDEV | NEA | |
| Massimo CIAMBRELLA | NEA | |
| Jinfeng LI | NEA | |

Contacts

Vladimir LEBEDEV: vladimir.lebedev@oecd.org
Lisa SMADJA: lisa.smadja@oecd.org

PROPOSED AGENDA (Draft)

DAY 0 SITE TOUR AND RECEPTION– Tuesday 29 January 2019

9:30 SITE TOUR, CEA Centre

17:00 COCKTAIL RECEPTION

DAY 1 – Wednesday 30 January 2019

8:30 Check-in
if not checked-in the day before

WELCOME SESSION

9:00 0.1 WELCOME FROM THE NEA
NEA (TBC)

9:10 0.2 WELCOME FROM THE HOST
CEA (TBC)

9:20 0.3 WELCOME FROM the WORKSHOP CHAIR
Christine GEORGES (CEA, France)

9:30 0.4 INTRODUCTION
Christine GEORGES, Workshop Chair

SESSION 1 - THE GLOBAL SITUATION IN THE DEVELOPMENT/IMPLEMENTATION OF REMOTE AND ROBOTIC SYSTEMS IN VARIOUS BACK-END ACTIVITIES INCLUDING POST-ACCIDENT RADIOACTIVE WASTE MANAGEMENT AND DECOMMISSIONING

Session Chair: Michel PIERACCINI

9:40 1.1 INTRODUCTION
Michel PIERACCINI, Session Chair

9:45 1.2 AN OVERVIEW OF THE DEVELOPMENT OF REMOTE AND ROBOTIC SYSTEMS IN THE NUCLEAR BACK-END
Leonel LAGOS (Florida International University, USA)

10:15 1.3 AN OVERVIEW OF THE IMPLEMENTATION OF REMOTE AND ROBOTIC SYSTEMS IN THE NUCLEAR BACK-END
Hua ZHANG (Southwest University of Science and Technology, China)

10:45 COFFEE BREAK (30')

11:15 1.4 HOW, AS DECISION-MAKERS, WE CAN ENSURE SUCCESSFUL IMPLEMENTATION OF REMOTE AND ROBOTC SOLUTIONS IN NUCLEAR BACK-END ACTIVITIES
Katherine EILBECK (Sellafield Ltd, UK)

11:45 1.5 DISCUSSION AND WRAP-UP

Michel PIERACCINI, Session Chair

12:30

LUNCH BREAK (60')

SESSION 2 - MAIN FACTORS INFLUENCING THE IMPLEMENTATION OF REMOTE AND ROBOTIC SYSTEMS IN THE NUCLEAR BACK-END

Session Chair: TBD

13:30

2.1 INTRODUCTION

Session Chair

13:35

2.2 TECHNICAL, TECHNOLOGICAL AND METHODOLOGICAL CHALLENGES, INFLUENCING FACTORS AND ANALYSIS OF THE LEVEL OF FACTORS' INFLUENCE FROM THE IMPLEMENTER'S POINT OF VIEW

Michel PIERACCINI and Emmanuel WOZNIAK (EDF, France)

14:05

2.3 ECONOMIC CHALLENGES, INFLUENCING FACTORS AND ANALYSIS OF THE LEVEL OF FACTORS' INFLUENCE FROM THE IMPLEMENTER'S POINT OF VIEW

TBD

14:35

2.4 ORGANISATIONAL, STAFF-RELATED AND SOCIETAL CHALLENGES, INFLUENCING FACTORS AND ANALYSIS OF THE LEVEL OF FACTORS' INFLUENCE FROM THE IMPLEMENTER'S POINT OF VIEW

Viktor VOLKOV (Rosenergoatom, Russia)

15:05

COFFEE BREAK (25')

15:30

2.5 CHALLENGES, INFLUENCING FACTORS AND ANALYSIS OF THE LEVEL OF FACTORS' INFLUENCE FROM THE R&D'S POINT OF VIEW

Jens VERBEECK (MAGICS Instruments, Belgium)

16:00

2.6 CHALLENGES, INFLUENCING FACTORS AND ANALYSIS OF THE LEVEL OF FACTORS' INFLUENCE FROM THE EXPLOITING PERSONNEL'S POINT OF VIEW

Jean-François Thro (Orano, France)

16:30

2.7 REMOTE AND ROBOTIC SYSTEMS PRODUCERS' VISION OF CHALLENGES AND INFLUENCING FACTORS

Martin KRUPICKA (Brokk AB, Sweden)

17:00

2.8 AN OVERVIEW OF INFLUENCING LEGAL AND REGULATORY FACTORS, ANALYSIS OF THE LEVEL OF FACTORS' INFLUENCE AND THE POTENTIAL TO INCREASE POSITIVE INFLUENCE

TBD

17:30

2.9 DISCUSSION AND WRAP-UP

Session Chair

18:00

END OF DAY I

DAY 2 – Thursday 31 January 2019

**SESSION 2 - MAIN FACTORS INFLUENCING THE IMPLEMENTATION OF REMOTE AND ROBOTIC SYSTEMS
IN THE NUCLEAR BACK-END**

Session Chair: TBC

9:00 2.10 INTRODUCTION
Session Chair

**9:05 2.11 NEEDS IN STANDARDISED APPROACHES TO THE DEVELOPMENT, TESTING AND
CERTIFICATION OF REMOTE AND ROBOTIC SYSTEMS FOR THE IMPLEMENTATION IN
THE BACK-END ACTIVITIES**
Rustam STOLKIN (University of Birmingham, UK)

**9:35 2.12 NEEDS IN EDUCATIONAL AND STAFF TRAINING PROGRAMMES, CENTRES FOR
PREPARING THE EXPLOITING PERSONNEL**
Patrick DEVAUX (CEA, France)

**10:05 2.13 NEEDS IN JOINT ACTIVITIES/INSTITUTIONS ON THE INFORMATION, DATA AND
KNOWLEDGE COLLECTION, ANALYSIS AND APPLICATION FOR SUPPORT THE REMOTE
AND ROBOTIC SYSTEMS IMPLEMENTATION**
Koji OKAMOTO (CLADS/JAEA, The University of Tokyo, Japan)

10:35 COFFEE BREAK (25')

11:00 2.14 DISCUSSION AND WRAP-UP
Session Chair

12:30 LUNCH BREAK (60')

**SESSION 3 - INTERNATIONAL COOPERATION IN THE FIELD OF THE DEVELOPMENT AND
IMPLEMENTATION OF REMOTE AND ROBOTIC SYSTEMS. PROSPECTS.**

Session Chair: Leonel LAGOS

13:30 3.1 INTRODUCTION
Leonel LAGOS, Session Chair

**14:00 3.2 AN OVERVIEW OF INTERNATIONAL INITIATIVES/ACTIVITIES AND THEIR READINESS
TO ADDRESS THE NEEDS IN SUPPORT THE IMPLEMENTATION OF REMOTE AND
ROBOTIC SYSTEMS IN THE BACK-END**
Christine GEORGES (CEA, France)

14:30 3.3 PROPOSED INTERNATIONAL UNDERTAKINGS UNDER THE AEGIS OF THE NEA
Vladimir LEBEDEV (NEA)

15:00 3.4 DISCUSSION AND WRAP-UP
Leonel LAGOS, Session Chair

CLOSING SESSION

16:00 4.1 SUMMARY AND CLOSURE OF WORKSHOP

Christine GEORGES, Workshop Chair

16:30

ADJOURN