



**ΕΕΑΕ** ΕΛΛΗΝΙΚΗ ΕΠΙΤΡΟΠΗ ΑΤΟΜΙΚΗΣ ΕΝΕΡΓΕΙΑΣ  
GREEK ATOMIC ENERGY COMMISSION

# ORPAS to Bosnia and Herzegovina

Eleftheria Carinou

# General background for the ORPAS missions

- The ORPAS missions provide an opportunity for a Member State to have its Occupational Radiation Protection programme independently **assessed** and **evaluated** against the IAEA Safety standards as an international benchmark for protection and safety of workers. Another benefit is that an independent appraisal allows information on **best practices** from the host country to be made available to other Member States.
- The mission is also used to **exchange** information and experience between the Team members and national counterparts.
- The RB provides the review team with advance material relevant to the mission including the self-assessment carried out by the participating organizations.

# ORPAS- Bosnia and Herzegovina

- Official request from the Member State, **March 2018**
- Pre-ORPAS in **4-6 July 2018**
- Full mission in **7-16 October 2018**
  
- **National CP**  
State Regulatory Agency for Radiation and Nuclear Safety

BOSNA I HERCEGOVINA  
Državna regulatorna/regulativna  
agencija za radijacijsku i  
nuklearnu sigurnost



БОСНА И ХЕРЦЕГОВИНА  
Државна регулаторна  
агенција за радијациону и  
нуклеарну безбједност

State Regulatory Agency for Radiation and Nuclear Safety

Broj/No: 01-14-3-373/18  
Datum/Date, 20.03.2018. godine

Mr Juan Carlos LENTIJO  
Deputy Director General  
Head of Department of Nuclear Safety and Security  
International Atomic Energy Agency  
PO Box 100  
A-1400 Vienna/ Austria

Dear Mr Lentijo,

**REQUEST FOR IAEA'S OCCUPATIONAL RADIATION PROTECTION APPRAISAL SERVICE (ORPAS) MISSION TO BOSNIA AND HERZEGOVINA**

Please refer to the subject above.

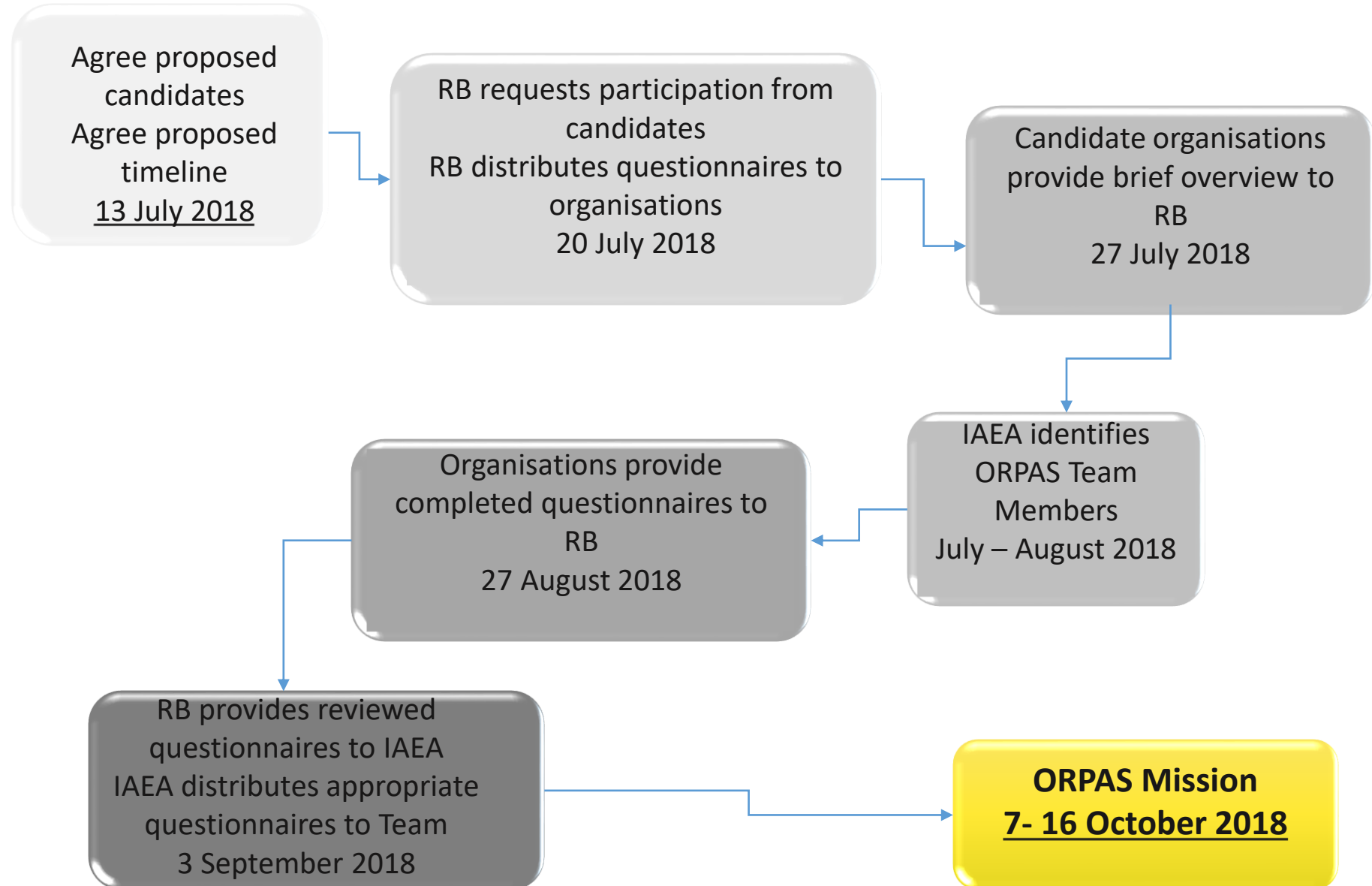
Bosnia and Herzegovina through State Regulatory Agency for Radiation and Nuclear Safety (SRARNS) would like to have an independent opinion on the status of occupational radiation protection arrangements in the country for further improvement.

We are therefore requesting an Occupational Radiation Protection Appraisal Service (ORPAS) mission. For planning purposes, it would be appreciated if the Mission is undertaken in July 2018 for pre-ORPAS and full mission in October 2018.

Yours faithfully,



# Timeline



# ORPAS Team and Participants



# ORPAS Team

Appraisal conducted by a small team (~10)

- International experts
  - Experienced in such reviews
  - Knowledgeable of international guidance and best practices
  - Able to recognise and understand the strengths of different national systems and arrangements
- The Team consists of
  - The Team Leader (and Deputy Team Leader)
  - Team Members and
  - IAEA coordinator





# Official participants

## Regulatory body (or bodies)

State Regulatory Agency for Radiation and Nuclear Safety (SRARNS)

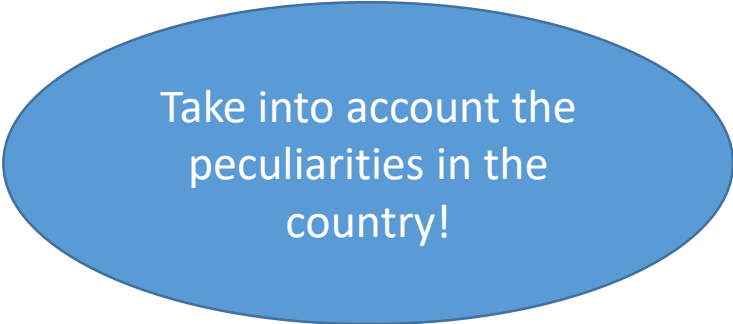
## TECHNICAL SUPPORT ORGANISATIONS (IMS, SSDL and other providers....)

- Public Health Institute of Federation Bosnia and Herzegovina, Radiation Protection Center
- Public Health Institute of Republic of Srpska, Radiation Protection Center
- EKOTEH D.O.O.
- Institute of Metrology of Bosnia and Herzegovina, SSDL
- Faculty of Veterinary Medicine, University of Sarajevo

## END-USER FACILITIES

- Clinical Centre of Sarajevo University
- Clinical Centre of Republic of Srpska
- International Medical Centre of Affidea
- University Clinical Hospital Mostar
- Jelšingrad Livar Steel Foundry
- Bosnamontaža Prijedor
- Jajce Alloy Wheels D.O.O.
- Elektroprivreda BiH Kakanj Coal Mine
- Elektroprivreda BiH Thermal Power Plant, Tuzla

[www.eeae.gr](http://www.eeae.gr)



Take into account the peculiarities in the country!



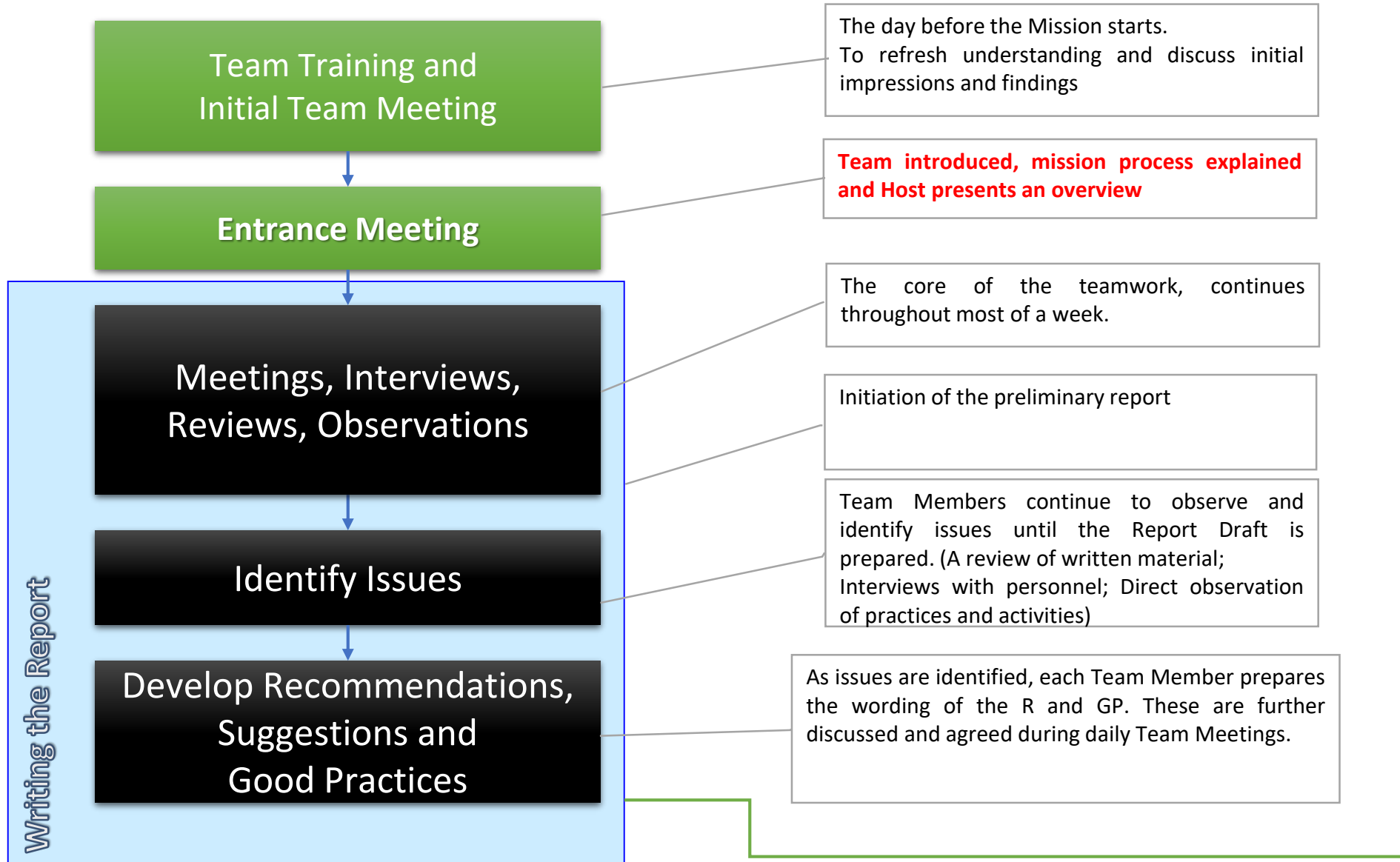
# ORPAS Questionnaires



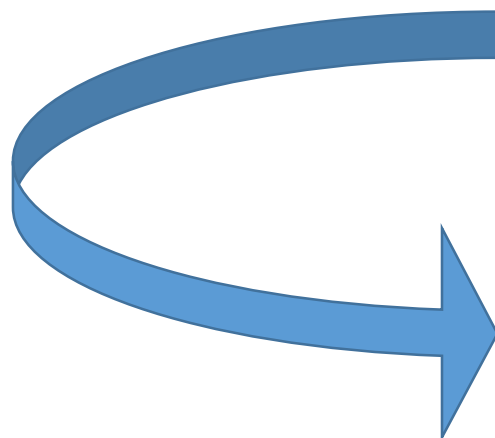
- Provide effective and efficient information
- Provide a complete information database upon which to base recommendations
- Assist in achieving consistency across different missions
- Provide a standard recording format for incorporation into the country profile
- 3 sets:
  - **The regulatory body**
  - **The Technical Service Organisations**
  - **The End Users: medical, industrial, NORM sites**
- Form the basis of preliminary appraisal by the ORPAS team



# Mission Activity ...



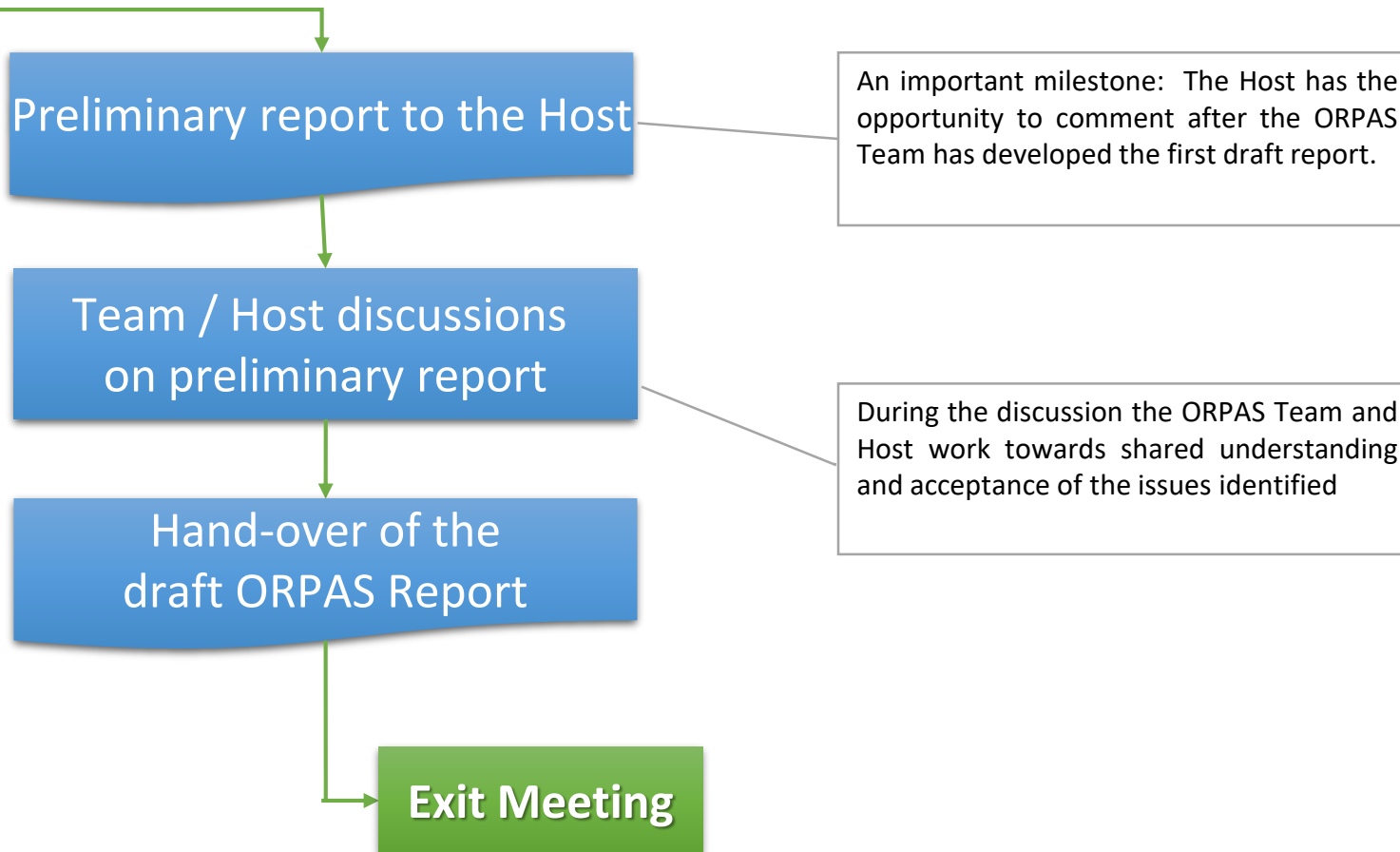
## Entrance Meeting



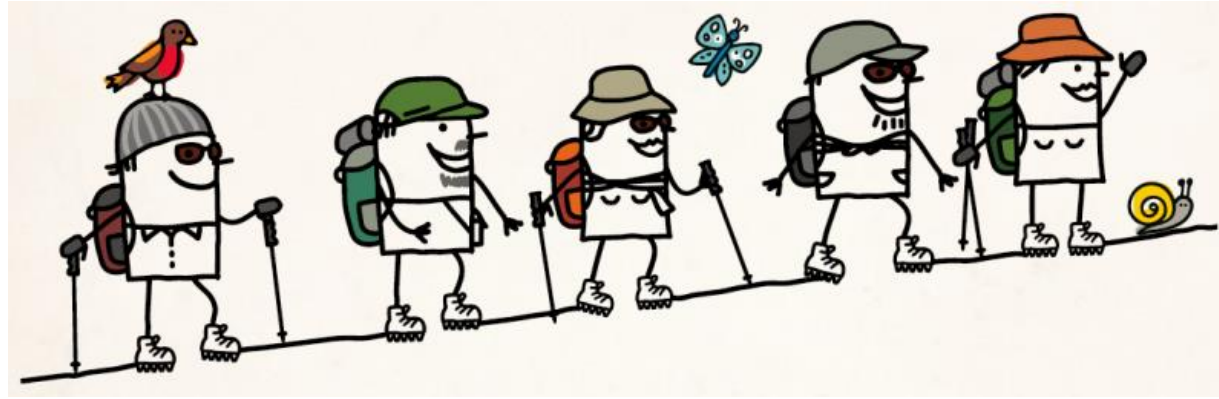
2018 Sunday	18:30	Venue: Hotel Holiday Sarajevo	<ul style="list-style-type: none"> <li>To refresh understanding and discuss on initial impressions and findings based on completed questionnaires</li> </ul>
8 October 2018 Monday	09:00 – 17:00	<b>Entrance meeting</b>	To be attended by all ORPAS official participants
		Welcoming address	E. Dizdarevic (National Counterpart - State Regulatory Agency for Radiation and Nuclear Safety)
		Opening of ORPAS Mission, Bosnia and Herzegovina 2018	M. Zeljko (Director, State Regulatory Agency for Radiation and Nuclear Safety)
		Remarks by the ORPAS Team Leader	E. Carinou (Greece)
		Remarks by the IAEA	H.B. Okyar (IAEA)
		Introduction of the International ORPAS Team	P. Hofvander (Sweden), A. Fremout (Belgium), V. Chumak (Ukraine), O. Ciraj-Bjelac (Serbia), P. Egan (Ireland), R. van SONSBEEK (the Netherlands), B. Michalik (Poland), F.P. Carvalho (Portugal)
		"ORPAS" within the Framework IAEA	H.B. Okyar (IAEA)
		Review Missions & Mission Process	
		Group photo session	ORPAS official participants
		Coffee break	
		<b>Presentations by official participants of the ORPAS</b>	<ul style="list-style-type: none"> <li>Maximum 20 min. per organisation</li> </ul>
		State Regulatory Agency for Radiation and Nuclear Safety (SRARNS)	E. Dizdarevic (SRARNS)
		Public Health Institute of Federation Bosnia and Herzegovina, Radiation Protection Center	A. Vidic (PHIFB&H)
		Public Health Institute of Republic of Srpska, Radiation Protection Center	B. Petrovic (PHIRS)
		EKOTEH D.O.O.	M. Rudan (EKOTEH)
		Institute of Metrology of Bosnia and Herzegovina, Standard Dosimetry Laboratory	A. Sabeta (MIB&H)
		Lunch break	
		Faculty of Veterinary Medicine, University of Sarajevo	N. Gradasevic (VFUS)
		Clinical Centre of Sarajevo University	A. Beganovic (CCUS)
		Clinical Centre of Republic of Srpska	G. Vuleta (CCRS)
		International Medical Centre of Affidea	Z. Kuzmanovic (IMC BL)
		University Clinical Hospital Mostar	S. Galic (UCHM)
		Jelšingrad	M. Ilic
		Bosnamontaža Prijedor	D. Vracar
		Jajce Alloy Wheels D.O.O.	A.Lagumdzija
		Elektroprivreda BiH Kakanj Coal mine	N. Djokic
		Elektroprivreda BiH Thermal power plant, Kakanj	S. Velispahic
		Coffee break	
		<b>Concluding remarks and introduction of site visits programme</b>	E. Carinou (ORPAS Team Leader) & H.B. Okyar (IAEA)
		<ul style="list-style-type: none"> <li>Round table discussion to clarify the scope of the appraisal &amp; agenda of site visits</li> </ul>	
		<b>Adjourn – 1<sup>st</sup> day</b>	E. Carinou (ORPAS Team Leader) & E. Dizdarevic (National Counterpart)



# ...Mission Activity



# ORPAS Site Visits



- Interviews and direct observations to be carried out at sites of authorized organizations.
- A site visit commences with an opening statement, including a summary of the scope of the ORPAS, the purpose of the visit and matters to be addressed.
- ORPAS Team members must be accompanied by a host country counterpart (preferably RA representative).
- Main goal is to have direct and face to face interactions.
- Concludes with exit meeting outlining preliminary observations and recommendations.
- Following a site visit, members will discuss their findings with the others at the daily team meeting.

# Site Visit Program

GROUPS	Appraisal	Organizations
<u>GROUP # 1</u>	Reviewer of Regulatory arrangements	<ul style="list-style-type: none"> <li>○ State Regulatory Agency for Radiation and Nuclear Safety (SRARNS)</li> </ul>
<u>GROUP # 2</u>	Reviewer of Technical Support Organizations	<ul style="list-style-type: none"> <li>○ Public Health Institute of Federation B&amp;H, RPC (Sarajevo)</li> <li>○ Public Health Institute of Republic of Srpska, RPC (Banja Luka)</li> <li>○ EKOTEH D.O.O. (Mostar)</li> <li>○ Institute of Metrology BIH SDL (Banja Luka)</li> </ul>
<u>GROUP # 3</u>	Reviewer of and Medical facilities and activities	<ul style="list-style-type: none"> <li>○ Clinical Centre of Sarajevo University</li> <li>○ Clinical Centre of Republic of Srpska (Banja Luka)</li> <li>○ International Medical Centre of Affidea (Banja Luka)</li> <li>○ University Clinical Hospital (Mostar)</li> </ul>
<u>GROUP # 4</u>	Reviewer of Industrial facilities and activities	<ul style="list-style-type: none"> <li>○ Jelšingrad (Banja Luka)</li> <li>○ Bosnamontaža Prijedor (Prijedor, Banja Luka)</li> <li>○ Jajce Alloy Wheels D.O.O. (Jajce)</li> </ul>
<u>GROUP # 5</u>	Reviewer of Industries involving NORM and review of relevant TSO	<ul style="list-style-type: none"> <li>○ Faculty of Veterinary Medicine, University of Sarajevo</li> <li>○ Elektroprivreda BiH Kakanj Coal mine</li> <li>○ Elektroprivreda BiH Thermal power plant (Tuzla)</li> </ul>

# The product of the ORPAS Mission: Report

- **Strengths**
- **Weaknesses**
- **Recommendations**
  - **Essential**
    - recommendation addresses a serious weakness in the occupational radiation protection programme.
    - Implementation should be addressed immediately
  - **Important**
    - until the situation is corrected; occupational radiation protection effectiveness in a certain area is compromised
    - Should be implemented as soon as can be reasonably achieved
  - **Advised**
    - the recommendation identifies a relatively minor weakness
    - enhances effectiveness but implementation may be delayed



# The product of the ORPAS Mission: Report

- The findings (recommendations and good practices) are addressed to **all participating organizations**, regulatory body, TSOs and End-Users
- The number of recommendations, suggestions and good practices is in **no way** a measure of the occupational radiation protection status and arrangements of participating organisations in the hosting country

**Thank you very much for your attention!**

