

**THEME: Connecting Science, Technology, Policy and Culture for Effective Nuclear Materials Management**

Tero Varjoranta, Presentation to INMM

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**‘Delivering effective safeguards: the need for agility in aligning people, technology, processes and culture’**

*In the next 12 mins I'll explain from Agency's standpoint what's new in connecting people, technology, processes and culture, and why is it important.*

**1. Expected developments and Extraordinary events in light of SG Objectives, Legal Obligations and Resources**

We all agree that deterrence of nuclear weapon proliferation is one of the top security priorities of the international community and that the IAEA makes an indispensable contribution in this regard through the effective implementation of safeguards.

And, of course, it is our legal obligation to implement safeguards – it is not a matter of choice: our legal obligation determines our workload.

And our workload is increasing.

More plants, more nuclear material, more spent fuel transfers, more decommissioning, etc.

For example, over the past five years, the amount of nuclear material under SG has increased by 22% - now over 200 000 SQs – rising by an average of 18 SQs every day.

**But our budget rose by only 0.6% in real terms**

### **Expected developments**

These trends upwards look set to continue and we need to accept that as the demands grow, the safeguards budget won't match them.

This is what we can reasonably predict in the future.

But then there is the more unpredictable part, the “extraordinary events” – major events that usually happen suddenly and to which we have to respond.

This is what I want to focus on today.

### **Extraordinary events**

Extraordinary events - whether positive or negative - complicate the effective management of safeguards implementation.

I will divide these extraordinary events into three types:

#### **FIRST: Diplomatic events –**

- The JPA and JCPOA were extraordinary diplomatic events. Another would be a diplomatic breakthrough on the DPRK's nuclear programme. This would obviously require novel and modified monitoring and verification approaches to be developed and probably implemented at short notice in a very challenging environment.

**SECOND: Security events** – for instance, a State's loss of control over part of its territory in which we apply safeguards;

- This is already happening - the Agency is being required to safeguard nuclear material located within areas in conflict, which disrupts our normal ways of operating.

**THIRD: Climatic events** - For example, an earthquake, flood or volcanic ash cloud – perhaps damaging nuclear facilities and/or compromising our field activities.

- Coping with the Fukushima accident required a variety of innovative instruments and methods to be used [including surveillance systems and radiation detectors installed at the edge of the highly radioactive zone, as well as frequent short-notice inspector access to areas around the damaged facilities].

**Traditional Agency responses** (our 2y P&B, 5y R&D plan, MTS, LT strategic plan etc.) to such extraordinary events are likely to be inadequate and too slow to meet the demands of the moment, where ‘failure is not an option’.

In this respect we have important lessons from the Iran file. Let me explain...

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## **2. Iran – Case Study**

As you all know - since 16 January this year, the Agency has been verifying and monitoring Iran’s implementation of its nuclear-related commitments under the JCPOA.

There were a number of features of this experience that required a significant, swift and innovative Agency response, i.e. to succeed, we had to be agile – while still acting within our legal mandate.

I would even say that if we had proceeded strictly by the “book”, we wouldn’t have been able to deliver a successful outcome.

Many of the things we were requested to do under the JPA - and then JCPOA - required us to develop new, robust approaches and ways of working – even to develop new

equipment - and with little time available. In such cases there were no “baseline” documents to consult (MTS, P&B, as I mentioned earlier).

Let me list 10 of these new challenges that we met successfully:

- i. **Final assessment of the possible military dimensions to Iran’s nuclear programme:** Nothing similar had ever been carried out by the Agency before.
- ii. **JPA and then JCPOA had lots of monitoring and verification requirements,** which were only known in detail to the Agency at the last minute as the Agency was not a party to the negotiations.
- iii. **Verifying the enrichment levels of UF<sub>6</sub> in real time** inside Iran required the deployment of a new instrument – the on-line enrichment monitor.
- iv. **Measuring the production and inventory of heavy water** had rarely been done by the Agency previously.
- v. **Daily access** requirements.
- vi. **Centrifuge R&D and manufacturing, remote monitoring,** etc. new, innovative and robust solutions were needed.
- vii. The **funding** issue: putting together a realistic budget was a challenge. At least initially – the JPA and JCPOA had to be funded through extrabudgetary contributions. Even then we had to start doing things BEFORE sufficient funding had been secured.
- viii. The **recruitment** process - had to be substantially speeded up, normally recruitment 1 y, training 1y. As agile measures, some recent retirees had to be reinstated and retirements postponed. As experienced staff moved back into frontline JCPOA-related positions, we had to backfill their vacant posts with temporary staff as we waited for new recruits to arrive and be trained.
- ix. **Rules changed in the middle of the game** – previous UNSC/BOG resolutions superseded by new resolutions. Not well recognized and understood by all!
- x. **Reporting to the BOG:** We faced different and extensive reporting requirements under the JPA and JCPOA.

### **3. How to meet these challenges: how to better connect people, technology, processes and culture**

#### **SOLUTION: 1. Productivity**

If we are to remain effective we need to improve productivity. There are three main ways

- already making progress on all of them.

- First, we exploit new technologies and modernize our IT system (MOSAIC project underway); much room for improvement.
- Second, we can streamline our internal processes. Begun an internal audit to see where we can cut out any wasteful activity.
- Third, we can encourage a number of our Member States to improve their cooperation with us.

**SOLUTION: 2. Responsiveness** to effectively and in a timely manner address rapidly changing extraordinary events,

(What I mean by “culture” is those ideas, beliefs, values, and knowledge, which constitute the shared bases of our action.)

Certain challenges lie in the organizational culture. Namely, The IAEA – as with many large organizations - has a culture steeped in years of doing things in a particular way, inherited certain work practices and pursued certain internal processes. Some of these are not appropriate to meet the demands of a quickly changing world.

We need to avoid a culture in which

- precedence overrides improvement,
- process overrides outcomes and
- established practice overrides critical analysis.

In my experience, to properly connect and align organizational culture, people, technology and processes, the following 5 areas needs to be in order:

- i. **Leadership** – Effective leadership is essential. In coping with the unexpected, a clear vision and direction from managers is critical if staff are to feel sufficiently confident to work out of their comfort zone and adapt to rapidly changing situations.
- ii. **Finance** – The Agency’s financial mechanisms need to be adapted to be able to cope with unexpected events. Even using the extrabudgetary mechanism, however, the Agency may still have to act in advance of having the guaranteed financial resources to fund its actions.
- iii. **Skills** – the skill set of our staff needs to be expanded through revised training programmes for our inspectors – to stretch their capabilities and instil innovative thinking and responses.
- iv. **Technologies** – IT will enable us to respond more quickly and more effectively.
- v. **Processes** – As I mentioned earlier, we are already looking carefully at how we can streamline our internal processes. A good place to start would be our recruitment processes.

**Operating within our legal mandate - agility, innovation and responsiveness will distinguish success from failure.**

**Organizational culture** – Overall, what is required is an adaptation in organizational culture. This will take time, but we need to sow the necessary seeds - learning as much as possible from lessons from Roadmap, JPA, and JCPOA.

## **4. Conclusion**

I am very positive about the future of IAEA Safeguards and their continued contribution to global security.

The Roadmap, JPA and JCPOA have demonstrated that the Agency is able to respond effectively and with agility even in response to extraordinary events, where ‘failure is not option’.

But we need to learn the lessons from this experience. Success will not come automatically – it will require excellent leadership, effective management, highly qualified staff and the ability to respond effectively, quickly and with agility when the need arises.

The world will continue to change and the Safeguards Department will need to change with it –

- to manage the everyday implementation of safeguards, **and**
- to be more agile in its responses to extraordinary fast moving events.

We will continue to work tirelessly to deter the spread of nuclear weapons – 24 hours of every day, 7 days of every a week and 52 weeks of every year in 182 countries across the Globe.

Failure is not an option.

I am confident, that with your support, we will continue to succeed!