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## **Augmented Reality off-the-shelf technologies for enhancement of on-site and post-inspection processes**

*Monday, 5 November 2018 17:15 (5 minutes)*

Visualization of data is almost last step for long process of sensing data by humans before data indication. Most important and complex data are processed by human eyes that are why last several decades the different concepts of delivering data directly to eyes overlaid real world view were introduced. Mainly, those were military projects, so it is hard to estimate payoff/cost ratio and they were never widely presented to public, but today such technologies appear from IT giants as well as innovative middle size companies, more that, it is even possible to buy a first generation consumer products. Safeguards inspector activity is always a target to thorough preparation, budget and time constraints to conduct inspection, high responsibility to make measurements and collect samples and pickup necessary data from containment and surveillance equipment, relatively few opportunities to observe and save visual information that could be interesting to analyst, especially in the time, when number of facilities under safeguards is raising and new type of facilities are waiting for licensing and safeguards, while Safeguards Division has no additional resources yet. As an example, Microsoft HoloLens augmented reality glasses could be used to enhance effectiveness of inspector's onsite work, save a time and give analyst important data, those were not reachable for them before. Wearables give opportunity to work with equipment and receive necessary information without interruption of work, just on top or inline of real environment. Nuclear materials measurements, calculations, digital containment devices access, barcode information could be received without additional external displays and related time to build it up. Built-in cameras, depth sensors and other optical electronics could build 3D models of surroundings and send this data for later processing or to real-time comparison of changes in design. Voice recognition could help find and visualized necessary data. Since IAEA modernized legacy containment and surveillance systems information communication, it could be possible to use such secured communication channels for future real-time highly visualized communication of inspectors with headquarter. All these improvements would make decisions about result more reliable and inspection processes faster and effective.

### **Which "Key Question" does your Abstract address?**

TEC2.1

### **Which alternative "Key Question" does your Abstract address? (if any)**

TEC2.5

### **Topics**

TEC2

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