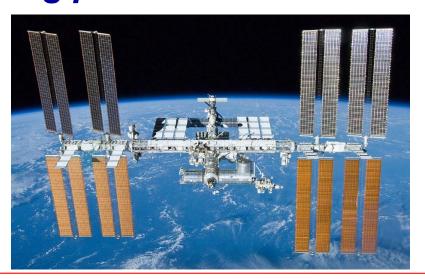
# **7<sup>th</sup> UNISEC-Global Meeting Group Discussion Activity**

Group 8

Commercialization of ISS –

How to keep the ISS sustainable

by promoting private sectors' involvement









### **Topic Description**



- How long ISS operations will still continue is still unclear among the participating governments.
- NASA and other space agencies are re-directing their budgets to deep space exploration, such as Moon / Deep Space Gateway.
- To keep the ISS sustainable a gradual transition would be pursued to LEO / ISS commercialization.

#### **Question**

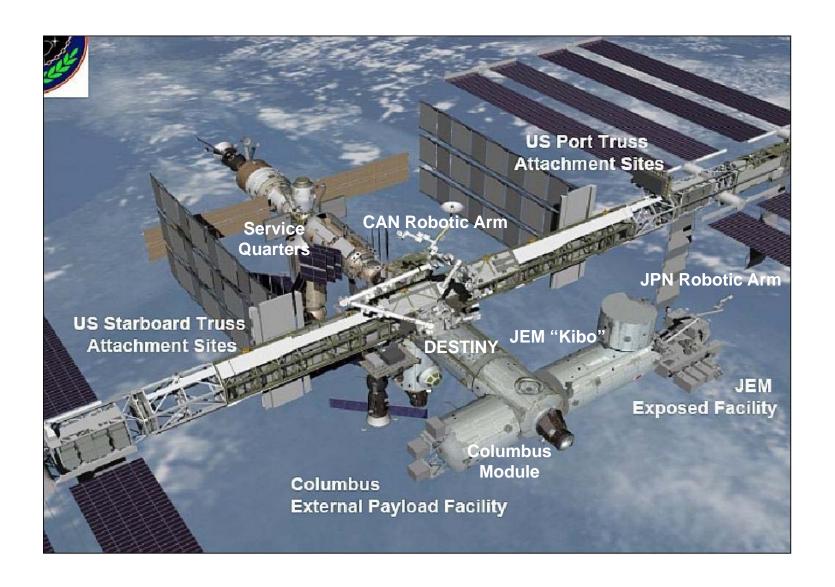
What products or services can make use of the ISS for commercial scopes?







ISS has internal & external platforms, robotics arms, and smallsat deployment facilities





## **ISS – Key Features & Applications**



Microgravity

**Space Environment** Exposure

Science Experiment **Facilities** 

Regular Re-fueling Mission

**Earth Observation** 

**Telecommunication** 

No convection No sedimentation Less buoyancy Radiation

Biology / Bio-tech

Food & Cosmetics

**Pharmaceuticals** 

In-orbit demonstration

Advanced materials

Satellite operation support

Cells grow differently in microgravity

Cell and tissue engineering to find new ways to fight diseases

New food processing methods

Adv. cell tissues to repair and replenish damaged skin

Different protein crystallisation, molecule and enzyme development

> Adv. antibiotics and other drugs

Quickly test new technologies

Gain "flight-proven" status to raise TRL

Improved manufacturing

Creation of new materials, alloys

3D print in microgravity – Made In Space

Provision of additional resources to support Earth-observation and relaytelecommunication



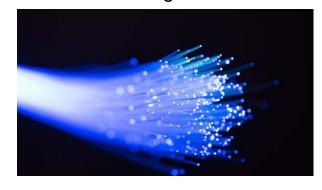
# **Examples of ISS Applications**





Broadcast studio

Plants & crop growth improvements – Target cotton challenge



Eye retinal implants manufacturing



Optical fibre manufacturing

Climate change through Earth Observation

Space Games and VR/AR

Safe space data storage

Disaster response through Earth Observation



Servicing station

Organs printing



Cemetery



### Workshop



- Ideation on commercialization ideas and applications
- Global themes where space can help / Earth services which could be translated to space
- Stakeholders?
- What is your service / product?
- Who are the customers? What is the value proposition?
- How to start up? Very rough business plan
- How to test?
- Preparation of pitch presentation