

Small Group Discussion Session

Group 1: Opportunities and challenges associated
with interplanetary nanosatellite missions

- CONCLUSIONS -

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➤ CHALLENGES

➤ OPPORTUNITIES

CHALLENGES

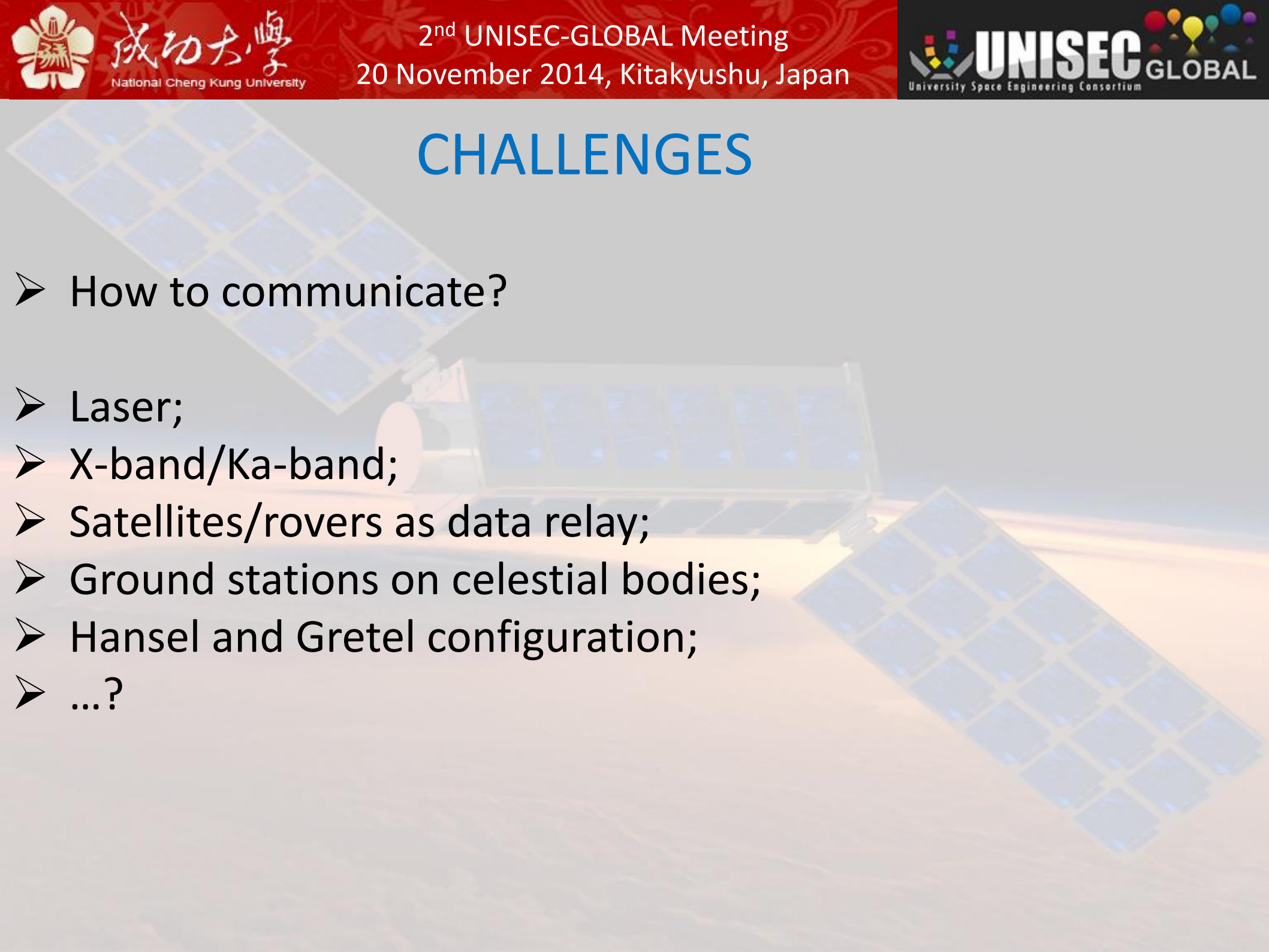
- How to get there?
- How to communicate?
- How to survive?
- How to demonstrate usefulness?

CHALLENGES

- How to get there?
- GTO and go;
- Interplanetary host mission;
- Photonic propulsion;
- Hybrid/Electrical propulsion;
- Future concepts from ISS?
- ...?

Onboard propulsion: small orbit corrections/attitude control.

CHALLENGES

- 
- How to communicate?
 - Laser;
 - X-band/Ka-band;
 - Satellites/rovers as data relay;
 - Ground stations on celestial bodies;
 - Hansel and Gretel configuration;
 - ...?

CHALLENGES

- How to survive?
- Thermal: internal heaters, coating, MLI;
- Radiations/degradation: shielding specific components;
- Micrometeorites: shielding;
- Internal clock shift: If no comm, how to?
- ...?

CHALLENGES

- How to demonstrate usefulness?
- Science: Different way of doing it, precursor.
- Technology demonstrator: Bigger mission, network, re-entry;
- Business: More affordable for privatisation.
- ...?

OPPORTUNITIES

SCIENCE

- MULTI-SITE SIMULTANEOUS MEASUREMENTS.
- MULTIPLE “BULLETS”.
- MISSIONS FREQUENCY.

Space weather, radio astronomy, etc...

DEMONSTRATOR

- TECHNOLOGIES.
- SCIENCE “BIG MISSIONS” PRECURSOR.

Propulsion, payload, communications, etc...

BUSINESS

- EASIER PRIVITASATION.

Marketing, space meteorology Data, interplanetary com., Space test-platform, etc...

CONCLUSIONS

- Many challenges!
- BUT many new opportunities!


**NANOSATELLITES CANNOT DO SAME AS BIG SATELLITES
BUT CAN DO DIFFERENT THINGS!**

BEYOND LEO SPACE MISSIONS TO BE THOUGHT DIFFERENTLY!

THANKS EVERYBODY!



Thank you for your attention!



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