
COMET Cybersecurity for Space systems operations
Day Introduction
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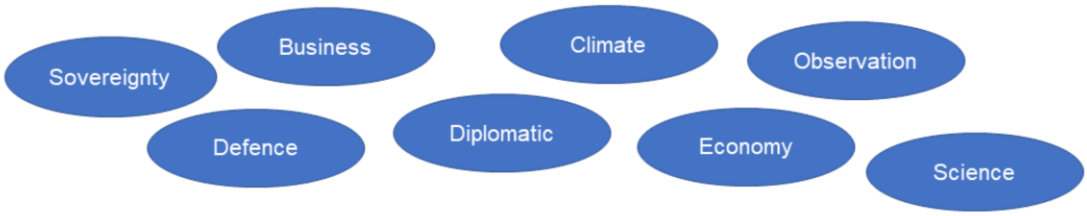
## Space as a critical sector




**All our societies are dependent on space :**

- A citizen uses in average 50 satellites per day (weather, GNSS, telecommunications)
- In 2018, in Europe, space industries generated 8,48B€ in sales and employed 45 000 FTE. Worldwide it was 261 B€, expected to be 2700 B€ in 2047.
- Considering this growth, space is evolving with new actors and systems to secure and operate.

COMET OPS & CYB - Cybersecurity for space operations – 19/09/2019

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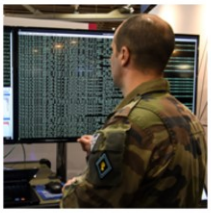
## Cyber context of space operations : “New” war zones

**Space and cyber are far from being peaceful environments.**







**Many organizations have defensive and offensive capacities in both space and cyber environments.**

**How do space operators stand ?**

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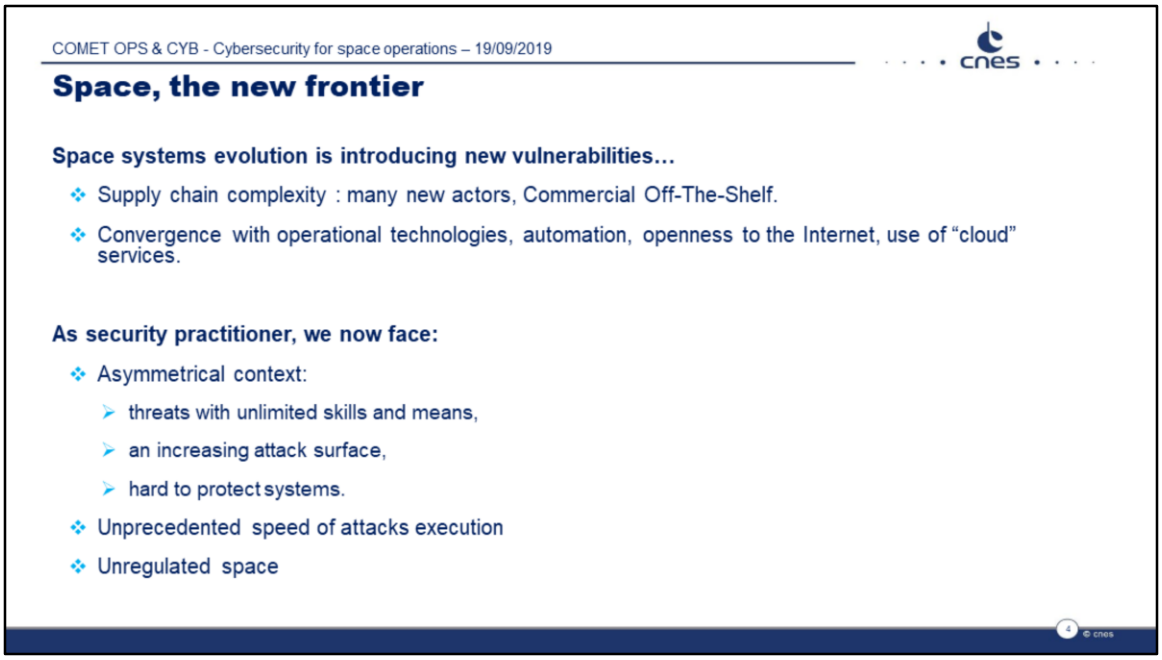
But back to cyber, what is the context of space operations ?

What factors are impacting our field of operations ?

https://www.nato.int/cps/en/natohq/topics_110496.htm




Space, like any critical and competitive sector, became aware that time-to-market and production costs were a differentiator factor.

Space systems are more complex although this complexity aims at easing operations. Thus, they have increased surface attacks and could be considered in a way more fragile.

For the security practitioner, we face an asymmetrical context :


Articles :
Putter Panda :
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Turla :
Russian-speaking cyber spies exploit satellites, https://www.kaspersky.com/blog/turla-apt-exploiting-satellites/9771/, September 9, 2015, accessed 20190529
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Cas du passé:
Last Call for SATCOM Security, IOActive, Ruben Santamarta, https://ioactive.com/wp-content/uploads/2018/08/us-18-Santamarta-Last-Call-For-Satcom-Security-wp.pdf, accessed 20190530

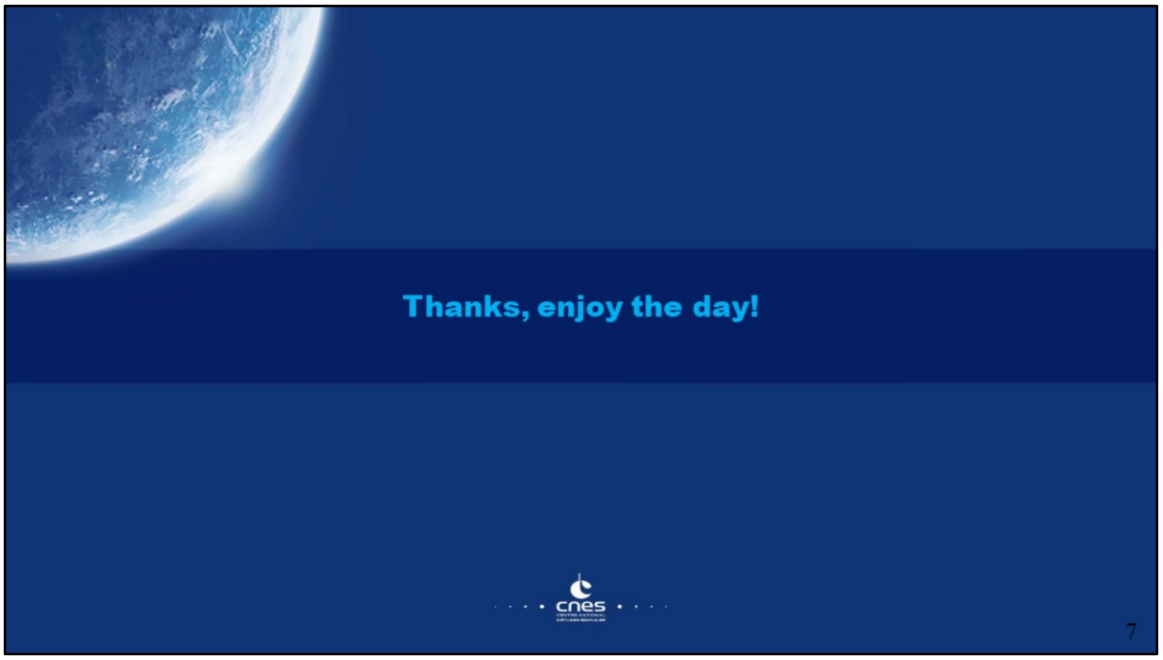
Prise de conscience
Viasat Exec on Cyber Threat to Satellite: We Must Take Action, https://www.satellitetoday.com/business/2018/12/11/viasat-exec-on-satellite-cyber-threat-we-must-take-action/undefined, accessed 20190530

Satellite communications firms remain vigilant as cyber threats evolve, Debra Werner, https://spacenews.com/satellite-communications-firms-remain-vigilant-as-threats-to-their-satellites-networks-evolve/, accessed 20190530

## What's next ?

**Let's talk about it today but :**

- Embrace the convergence between Information Technologies and Operational Technologies (and discuss it at next COMET-CYB).
- Work together.
- Use standards and regulations opportunities to build strong and efficient security programs, to the service of OPS.
  - Evaluate and identify cyber risks, starting with threats.
  - Buy, build and operate secure technologies
  - Blend security in all missions during all their lifecycle.


Thanks, enjoy the day!
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