Small Satellites: Chances and Challenges
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Do small satellites need insurance

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Summary
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1. **Introduction**

2. **Is there an insurance obligation for small satellites?**
   - International
   - National

3. **Need for specific insurance solutions for small satellites?**
   - Available coverage's: Property insurances / Liability insurances
   - Assessment of the risk by the insurance market
     - Property damage / third party liability
     - Cost of insurance
   - Specific insurance market?

4. **Conclusion**
Is there an insurance obligation for small satellites?
2. Is there an insurance obligation for small satellites?

- **At international level:**
  As for other type of satellites / space objects falling under the application of the international regulations, a liability may be beard by the launching state, but no insurance obligation is attached to such liability.

- **At national level:**
  The liability and eventual insurance obligation will depend on each applicable national legislation.
2. Is there an insurance obligation for small satellites?  
National legislation

French Space Law:

Applicable to launch and on-orbit operations
Operator is obliged to take out an insurance covering an amount between €50 million and €70 million, being commonly admitted as €60 million in order to cover liability for damages caused to persons and property
Applicable to small satellites?

US CSLA:

Applicable to launch activities
Applicable to small satellites?
2. Is there an insurance obligation for small satellites?
Application of national legislation

Austrian Outer Space Act

- Operator is obliged to take out an insurance covering a minimum amount of € 60 million in order to cover liability for damages caused to persons and property
Applicable to small satellites?
Need for specific insurance solutions for small satellites?
Space Property Damage Insurance

- Object: indemnifying the insured or loss payee in case of loss or damage to the insured satellite
- Depending on the type of damage: Total Loss, Constructive Total Loss or Partial Loss, the insurers will indemnify the declared value of the satellite or the value corresponding to the damaged part of the satellite
- Traditionally these insurances are on an “all risks” basis
- Generally 12 months cover
Third Party Liability Insurance

• Third party liability for launch phase
  – Generally cover liability in case of damages to third parties caused during the launch activities either by the launch vehicle or the on board satellite
  – Generally subscribed by launch agency and following cross waivers and hold harmless between parties
  – Single TPL policy covering all contractors at every tier
  – Duration of coverage varies

• Third party liability for spacecraft operations
  – Generally cover liability in case of damages to third parties caused by spacecraft operations
  – Several Nations require licensed or registered operators to provide in orbit third party liability insurance
Assessment of the risk by the insurance market

- Property damage insurance:
  - Effect of technologies / manufacturers / operators
  - Amount of insurance needed for these projects is very limited, and the current space insurance capacity is overcapacity
    - Launch and 1 year on-orbit insurance for total loss only is available for nano-satellite
      - The Nee-01 Pegaso, 1st Ecuador’s satellite, which collided with debris was insured for a limited amount of insurance (<$1m)
    - On-orbit insurance only might be more difficult to place due to the orbit used and the lack of flight experience of these nano-satellites
Assessment of the risk by the insurance market

• Third party liability insurance:
  – Standard TPL insurance available
  – Risk of collision with other spacecraft remains remote
  – Risk of damages on earth: quite low (most of the time full destruction of the satellite when reentering into the atmosphere)
2014 International Market Capacity (Millions)
Launch – USD 760M

Launch Vehicle Flight Only capacity for a dual launch Ariane 5 ECA is more than USD 900M
2014 International Market Capacity (Millions)
In-Orbit – USD 570M

- Asia & Other - $71M
- France - $65M
- Rest of Europe - $70M
- United Kingdom - $246M
- USA - $120M
Third party liability market

- Capacity for satellite third party liability coverage is at least USD 500M, increasing to USD 750M per occurrence for a short risk period i.e. de-orbiting or launch flight.

RC Tiers Spatiale- Capacité pour 200MUSD (%)
THANK YOU FOR YOUR ATTENTION