

**ACSER Cubesat 2018:  
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**Space Business 101: Practical  
Considerations for Starting a Small Satellite  
Business**

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(APAC)**

# APAC Background

- APAC - Sydney based consulting firm specialising in space and telecommunications industries
- Conducted a number of studies for Australian Govt to characterise Australian space capabilities, markets and global supply chains
- Involved in the formation and early stages of development of numerous space businesses
- Core service is advising on the interface between technology and business
- Experts in Space Insurance
  - APAC principals ran one of the top-ten ranked global space insurance companies generating A\$175 million p.a.

# Business Background

## Kirby Ikin

Global Chairman of the National Space Society succeeding Apollo XI astronaut Buzz Aldrin

Co-Founder of Deep Space Industries

Former Managing Director of GIO Space

## Bill Barrett

Has worked in all aspects of space: satellite manufacturing, earth stations & satellite tracking, satellite services, launch, insurance & regulatory for Hughes Space & Comms (now Boeing), OTC, Telstra, GIO Space, Asia Pacific Space Centre

Co-founder Space Industry Association of Australia and long-

## Factors to Consider

- Regulations
- Spectrum
- Business structure
- Financial structures and options
- Contract structuring to manage risk
- Insurance

# UN Space Debris Mitigation Guidelines

Limit debris released in normal operations

Minimise potential breakups during operations

Limit probability of collisions in orbit

Avoid intentional destruction

Minimise potential post mission breakups due to stored energy

Limit long-term presence of spacecraft & launch vehicle stages in LEO post mission

Limit long-term interference of spacecraft &

# Spectrum – Need License To Communicate

All satellites need registered spectrum to operate

Must meet international and Australian licensing & coordination requirements (not cause interference)

Australians file thru ACMA which enacts ITU requirements and licences Australian spectrum

ITU process (thru ACMA) requires technical details including orbit, frequencies & modulation, power

Must coordinate to ensure no interference (API, C)

ACMA Space license enables Class license for E/S

## Business Structures

- Business structure should allow for ease of adding and removing investors / shareholders
- Separate entities such as holding company and operating company
- Awareness of ITAR issues when operating internationally
- Vesting of shares for key employees

# Financing Options

## Equity

Family and friends

Seed funding

Series A, B, C Funding rounds

## Debt

Loans for equipment

Operating funds

Asset backed by personal guarantees

## Cashflow

Leasing

# Contract Structuring

Contracts need to contemplate all potential situations

Contracts should reflect who bears risk

Contracts should not leave one party without redress or recourse

- Launch delay
- Manufacturing delays
- Inability to service customers

## Insurance as a Financial Tool

- Insurance is a financial tool that can be used to address and overcome financial / business risks not just mitigate technical risks
- Used wisely insurance can be used to help build the business by covering risks perceived by other parties such as potential customers (e.g. start-up launch service providers)

# The Nature of Space Insurance

It is a common misperception to think about insurance as insuring specific assets i.e. insuring “the satellite” or “the launch”

In fact it is really about insuring the business against the consequences of certain potential events occurring.

The essence of insurance is to place the insured party back in the financial position they would have been in if the relevant event did not occur.

In this context it is vital to understand potential

# Insurance Addresses Stakeholder Concerns

A space business will have many stakeholders with a financial interest in the success of the business:

- Shareholders / equity providers
- Debt providers
- Customers
- Management & Staff

A space insurance program can be designed to cover the different financial concerns of stakeholders to facilitate the establishment and assist in the

# Types of Insurance For Space Activities

Insurance can provide coverage for different phases of risk in space activities

1. Satellite Manufacturing & Testing
2. Transportation of Satellite to Test Site or Launch Site
3. Satellite Integration & Testing at the Launch Site
4. Launch
5. In-Orbit Commissioning
6. In-Orbit Operational Life
7. Satellite Decommissioning
8. **Third Party Liability**

## Types of Exposure

### Exposures might include:

- Cost of replacing the satellite (which may be different to the cost of the first satellite)
- Cost of a replacement launch (if not covered by a reflight guarantee)
- Costs to keep the business running while replacement plans are made
- Increased costs of debt / equity
- Loss of market to rivals

## Insurance as a Start-up Tool

Intelligent use of insurance can also help a start-up space business actually become established.

Often uncertainty about technology and development plans prevents prospective customers from signing on for the proposed service.

Using insurance to manage these concerns can be the difference between raising money with customers in hand (a much easier task) versus raising money

## Protecting Debt & Equity

A well-structured insurance plan can also be used to ensure the business can reach strategic milestones

Equity providers will take comfort in knowing their investment is insured through critical milestones necessary for them to earn a return on their investment

Similarly debt providers need to know the business can reach the point that it can service debt

## Conclusion

- When starting a space business it is critical to be aware of regulatory requirements such as spectrum allocation, debris mitigation and service licences
- It is vital that the business have appropriate corporate structures to allow the business to evolve
- The business plan should make appropriate use of different forms of finance such as debt, equity and leasing
- Insurance coverage should protect all aspects of the business as well as relevant stakeholders, and be