

Key Considerations in

Hosted Payloads

There are many different variations of potential hosted payload arrangements and missions. However, to successfully conclude any hosted payload agreement, a number of core issues, risks and complexities must be addressed, often under severe time-pressure. This article highlights contractual and legal issues that are common to most hosted payloads.

In certain cases a single satellite manufacturer will build both the satellite and the hosted payload. In other cases the hosted payload is constructed by another entity and then delivered to the satellite manufacturer for integration with the satellite prior to launch. While some hosted payloads are purely commercial missions, they often have a government mission, with the US government being the most frequent user of hosted payloads – see the chart on the right for a representative list.

Hosted payloads are potentially attractive for commercial satellite operators because they provide incremental revenue but do not require significant additional investment or lost opportunity cost, thereby enhancing the business case for a new satellite. The sharing of the satellite bus and launch vehicle enables the entity seeking to place its payload on the satellite to enjoy significantly lower costs, timely access to space, shorter overall project time and lower execution risk as compared to a standalone satellite project.

The parties must weigh the potential advantages and benefits of a hosted payload arrangement against a myriad of issues and complexities. There is limited precedent and no ‘standard’ contracts or templates in this area. Each arrangement is the product of intensive negotiations, which can be further complicated by the numbers of parties involved or requiring consultation, including to varying degrees the host, the client, satellite manufacturer, launch services provider, insurers and others. These negotiations may take longer than if no hosted payload were present and may conflict with business-driven timelines for the implementation of a satellite project by the host.

Many of the key contractual issues in a hosted payload agreement ultimately relate to the allocation of risk between the parties. A prevailing theme is that the primary payload and mission of the satellite and launch schedule generally take precedence over the hosted payload, subject to commercial considerations and negotiating leverage of the parties.

In the event the hosted payload is manufactured by a third party and later delivered to the satellite manufacturer for integration with the satellite, the parties must address risk of loss and title during transit and following integration. In many cases, title and risk of loss remain with the client during the construction phase and through the end of life of the satellite, with the client arranging for insurance and bearing the risk of loss of the hosted payload.

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Negotiations between the client and the host also must address the issue of delays that could impact the timely launch of the satellite. Timely launch is a key commercial consideration for the host due to the underlying customer commitments made by the host to its customers for service, and the associated loss of considerable revenue for each month of delay. Such loss of revenue can often undermine or negate the added revenue from the hosted payload arrangement, particularly if the host’s customers have a termination right in the event of excessive delay. The client will also seek to ensure its hosted payload is launched in a timely manner and that the hosted payload mission is not subjected to extreme delays, particularly where there is a commercial mission for the hosted payload.

Delays can arise in a number of ways and each needs to be addressed in a delicate balancing of commercial concerns amidst the practical realities of the inherently unpredictable and risky nature of satellite construction and launch activities. Some of the issues addressed in the context of delays are set forth below:

- If the hosted payload is not being constructed by the satellite manufacturer, delays can arise through a late delivery of the hosted payload, which does not allow sufficient time for integration and testing prior to the scheduled launch date. Aside from delivery, the parties should address acceptance testing of the hosted payload to ensure compatibility with the satellite and opportunity to fix errors and the resulting delays. The host will typically seek contractual provisions that provide a monetary incentive and/or penalties to ensure the hosted payload is delivered on or before the agreed contractual date, and provide for a clear contractual termination in the event the hosted payload delivery and integration is delayed beyond a certain time. The client may seek relief from these provisions in the event the satellite construction and/or launch were delayed irrespective of the hosted payload delivery delay. In order to ensure a timely satellite launch if the hosted payload “does not make it” for any reason, the client is often required to furnish a “mass dummy” which can be substituted for the hosted payload and allow the satellite construction and launch to proceed on time.

Operator	Payload & Sponsor	Satellite & Orbital Location
SES	GOLD – NASA / University of Colorado	SES-14 at 47.5° W.L.
	WAAS – U.S. Federal Aviation Administration (FAA) / Raytheon	SES-15 at 129° W.L.
	CHIRP – U.S. Air Force	SES-2 at 87° W.L.
	EGNOS 1 & EGNOS 2 – European Space Agency	SES 5 at 5° E.L. and ASTRA 5B at 31.5° E.L.
Eutelsat	WAAS - FAA / Raytheon	EUTELSAT 117 WEST B at 117° W.L.
	EDRS - European Space Agency / Airbus	EUTELSAT 9B at 9° E.L.
Intelsat	IRIS – U.S. Air Force	IS-14 at 45° W.L.
	ADF - Australian Defence Force	IS-22 at 72.1° E.L.

A representative list of certain current in-orbit and under-construction hosted payload missions, based on publicly available data, compiled by Sheppard Mullin

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- Issues of delay can also arise in the event of satellite construction delays relating to the satellite manufacturer and launch delays relating to the launch services provider. For each scenario, the nature and cause of the delay (e.g., excusable delay, inexcusable delay and “force majeure”) and the associated impacts, such as monetary damages and termination rights, must be considered and aligned carefully through the contractual chain that includes the host and client.

- The parties also must address the catastrophic possibility of a launch failure. This risk is often handled through insurance and potential re-launch rights.

A number of operational issues relating to the satellite, its primary mission and the hosted payload need to be considered and addressed, in conjunction with insurance and overall risk management, including:

- Total or partial failure of the satellite and/or the primary payload;
- Priority and allocation of power and resources of the satellite in the event of satellite anomalies or power loss;

- The host’s ability (or that of a future owner of the satellite) to move the satellite from the agreed orbital location to another orbital location and potential constraints on such rights (e.g., within a defined orbital arc or subject to the payment of liquidated damages);

- The ability of the host to take action under circumstances where the hosted payload causes harm or interference to the primary payload or the satellite; and

- Adherence by the client to frequency rights priorities and spectrum coordination agreements, where applicable, as well as obligations and a process for the resolution of interference issues between the hosted payload and adjacent satellites.

Additional complexities arise where the payload is owned by a government or used in support of a government mission. US government contracts are required by regulation to include certain standard Federal Acquisition Regulation clauses and, in some cases, agency-specific supplemental clauses. Other governments have analogous government contract clause requirements. Many of these clauses are incompatible with the government’s role as a ‘passenger’ rather than the ‘driver’ of the bus. Others allocate risk in ways that differ dramatically from standard commercial practice in the satellite industry. For example:

- Most government contracts include a standard ‘changes’ clause that allows the government to make unilateral changes in drawings, designs, specifications, and descriptions of services, provided such changes are within the general scope of the contract. The parties may wish to identify, in advance, certain types of changes, such as significant increases in mass or power consumption requirements, that are beyond the scope of the contract and therefore cannot be made without mutual agreement.

- The standard ‘inspection’ clauses allow the government to inspect and test work at all places and times, including during

the manufacturing process. Overzealous inspections can cause delays that are inconsistent with the fast-paced demands of a commercial satellite production and launch schedule. The inspection clause provides that the government cannot “unduly delay” the work, but the government and contractors often have different interpretations of what that means.

- The standard ‘default’ clauses allow the government to terminate a contract for cause in the event of any breach, even if relatively minor, and for any delay in delivery, even if only by a day. Many sources of launch delays that, in the commercial context, would be considered excusable or would simply result in a reduction in the contract price, could be grounds for termination for default under a government contract. These concerns can be resolved, to some extent, by supplementing the default clause with additional excusable delay language, providing for liquidated damages rather than an immediate right to terminate for delays, and including service level agreements rather than a requirement for perfect in-orbit performance.

- The standard ‘termination for convenience’ clauses exclude any amount for lost profits. This can be problematic when the business case for a satellite depends on the profits to be derived from the hosted payload and the government terminates for convenience late enough in the process that it is not possible to find an alternative revenue stream. The parties may wish to address this issue by agreeing to a termination liability schedule that supplements the standard termination for convenience provision.

These are but a few of the areas in which the parties should consider adapting standard government contracts language to suit the unique demands of a hosted payload agreement.

Notably, the standard government contracts clauses for commercial, rather than non-commercial, items are less onerous in some respects. For example, they require mutual agreement for changes and also include somewhat less burdensome inspection rights. The government also has more flexibility to modify standard clauses when a hosted payload agreement is issued as a contract for commercial items. The government, however, does not always exercise that flexibility. For example, the highly publicised Hosted Payload Solutions (“HoPs”) contracts were issued as contracts for commercial items, but the government took the unusual step of adding non-commercial changes and inspection clauses. The government apparently determined that its own standard commercial terms were not sufficient to protect its interest in the unique context of hosted payload agreements.

It is important to remember that the government contracts issues identified above, and many others, impact both prime contractors and subcontractors. If, for example, the prime contract with the host includes a broad changes clause, the host will need to include a similarly broad changes clause in its subcontract with the satellite manufacturer, to ensure that it can comply with any changes ordered under the prime contract. Thus, before agreeing to the terms and conditions of the prime contract, the prime contractor needs to be certain that its subcontractors will be willing to accept them as well. This requires coordination and teamwork throughout the supply chain.

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Additional contractual issues that are typically addressed between the client and host include: (a) agreement on whether and which party or parties will obtain and maintain insurance relating to the hosted payload; (b) rights for the client to place a successor hosted payload on a follow-on satellite; (c) export control issues and access to technical information; (d) execution risk introduced by export credit financing risk, if applicable; (e) licensing issues relating to the space component, ground segment and market access issues; (f) rights associated with the timing of the de-orbit of the satellite at its end-of-life or in the event of a satellite failure; (g) change in control and assignment provisions; and (h) dispute resolution mechanisms (such as international arbitration), which can be particularly important when the client and host are from different jurisdictions.

Hosted payload agreements offer an attractive opportunity for a mutually beneficial arrangement between the client and host. However, as this article highlights, considerable planning needs to be undertaken of various important issues to ensure that the client and host reach an agreement in the first instance, and that the potential for future disputes over a three year construction cycle and fifteen year satellite lifetime is minimised. In order to successfully conclude a hosted payload agreement, the client and host each need to determine, from what are often intense negotiations, that the risk reward equation resulting from the hosted payload outweighs the go-it-alone scenario. In the cases cited earlier in this article, the parties were able to strike that equation and the general feedback across the industry has been favorable toward such arrangements, which is promising for future hosted payloads.

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