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## VSAT Equipment and Bandwidth Procurement

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## Presentation Outline

- **Satellite Communication Services Market Structure**
- **Satellite Service/Product components: Procurement Approaches**
- **Technical Considerations**
- **Provider Selection Process**
- **Provider Selection: Factors to be considered**
- **Proposal Evaluation Process**
- **Negotiations and Contract Award**

## Satellite Communication Services Market Structure

- Satellite Access Providers
- Satellite Communication Service Providers
- Ground Equipment Manufactures/Vendors and Integrators
- System Integrators
- “End” Users

## Satellite Service/Product components: Procurement Approaches <sup>1/3</sup>

The services under the scope of this discussion may be categorized as follows:

- Installation and maintenance of VSAT equipment
- Satellite space segment or bandwidth
- Hub or teleport services
- Connection to public network ( PSTN, Internet backbone etc)

The above listed services may be purchased as one unit (**end-to-end services**) or individually (**component services**).

## Satellite Service/Product components: Procurement Approaches <sup>2/3</sup>

- If you purchase **end-to-end services**, you will engage and deal with a single provider.
- Acquisition of **component services** requires engaging several providers, but in most cases will involve dealing with two service providers: one to supply, install and maintain your equipment and the other to provide network services (bandwidth, hub services and connection to public network).

## Satellite Service/Product components: Procurement Approaches <sup>3/3</sup>

	Pros	Cons
<b>Component Services</b>	<ul style="list-style-type: none"><li>You have full control of your network and can optimize it as you see fit- useful for large and complex networks</li></ul>	<ul style="list-style-type: none"><li>Dealing with many providers increases administrative overheads</li><li>Risk and cost of integration of services is borne by you</li><li>Requires that you have highly skilled technical personnel or consultants for design and integration, who can be very expensive</li></ul>
<b>End-to-end Services</b>	<ul style="list-style-type: none"><li>You do not have to deal with integration- risks transferred to provider</li><li>You have only one service provider to deal with, simplifying overall administration, monitoring and management of service provider</li><li>You do not have to engage expensive and highly skilled technical staff or consultants</li></ul>	<ul style="list-style-type: none"><li>Service provider is responsible for optimizing your network- you usually will have no or little say. May not make the most optimal configuration for your needs</li></ul>

## Some common technical considerations <sup>1/3</sup>

There are a whole host of technical considerations you will need to make when buying VSAT services. Most of them involve making trade offs among the technical characteristics that give you what you want and what you can afford.

The common considerations you may be forced to make are:

- Whether to use C or Ku or Ka band
- Whether to use shared or dedicated bandwidth
- Use of Inclined Orbit satellite

## Some common technical considerations <sup>2/3</sup>

### Pros and Cons of C Band vs. Ku or Ka Band

	C Band	Ku Band	Ka Band
Advantages	Less affected by rain Wider coverage	Smaller dishes Easy installation	Smaller dishes than Ku Band
Disadvantages	Larger dishes Interferences with terrestrial microwaves frequencies	Affected by rain Smaller beam	Affected by rain

## Some common technical considerations <sup>3/3</sup>

### Shared vs. Dedicated Bandwidth

It is critical for you to decide whether you will accept shared or dedicated bandwidth.

- Shared bandwidth refers to bandwidth that is shared with other customers of your service provider.
- Shared bandwidth may be desirable when you will not be using all the bandwidth all the time
- Dedicated bandwidth is “committed” solely to you.
- So, if you have a large volume of users accessing the system throughout the day or if you intend to run real time applications such as telephony or videoconferencing, then you will need dedicated bandwidth.

## Shared vs. Dedicated Bandwidth

### Key metrics to be considered:

- The **contention ratio** i.e. the number of users sharing the bandwidth.
- **Committed Information Rate (CIR)** i.e. the guaranteed minimum capacity at all times. Even with shared bandwidth capacity, your service provider may guarantee you a specified CIR at all times.
- **Bursting capacity** i.e. the ability of a VSAT system to utilize capacity above and beyond its normal allocation. Bursting is only possible when you purchase shared bandwidth.

When purchasing shared capacity, you should ask your service provider to specify the contention ratio, your CIR and how much bursting capacity you can get.



## Use of Inclined Orbit Satellite

The price of bandwidth on inclined orbit satellites is usually much lower since these satellites are nearing their end of life. The downside is that it requires a dish with tracking capabilities that can be very expensive. The high capital costs associated with the expensive antenna can be offset by lower operating costs but only if you are purchasing large amounts of bandwidth.



## Provider Selection Process <sup>1/7</sup>

The acquisition process involves either **competitive** or **non competitive** selection of your VSAT equipment and service provider(s).

- Under competitive selection, two and usually more service providers are asked to submit proposals or “bids”. The selection is based on the best offer, arrived at by comparing all the proposals received using a pre-determined evaluation scheme.
- Under non-competitive selection, only a single service provider is invited to submit a proposal, and no other service providers are considered. Non-competitive selection is also referred to as **single-sourcing** or **direct contracting**.

## Provider Selection Process *2/7*

- The competitive approach is strongly recommended except in very extreme situations that can and should be clearly justifiable on economic and efficiency grounds.
- Non competitive acquisition could be considered ( for example ) :
  - ✓ In an emergency, for example if a VSAT is required to establish communication capabilities following a natural disaster and expediency is the over-riding factor.
  - ✓ If there is only a single authorized or licensed supplier in your country or region.
  - ✓ If you want to ensure compatibility and integration with existing equipment or systems.
  - ✓ If you are extending an existing contract based on prior good performance and for continuity purposes.

## Provider Selection Process 3/7

- In case of competitive selection when you have analyzed your requirements and completed your vendor search, you are ready to start the vendor selection process. You can then proceed by the following ways
  - ✓ Request For Proposal (**RFP**)
  - ✓ Request For Quotation (**RFQ**)

## Provider Selection Process 4/7

### RFP

- The RFP process brings structure to the procurement decision and allows the risks and benefits to be identified clearly upfront.
- The RFP may dictate to varying degrees the exact structure and format of the supplier's response
- Effective RFPs typically reflect the strategy and short/long-term business objectives, providing detailed insight upon which suppliers will be able to offer a matching perspective. [\[2\]](#)

## Provider Selection Process 5/7

### RFQ

- An RFQ is used when discussions with bidders are not required (mainly when the specifications of a product or service are already known) and when price is the main or only factor in selecting the successful bidder.
- An RFQ may also be used as a step prior to going to a full-blown RFP to determine general price ranges. In this scenario, products, services or suppliers may be selected from the RFQ results to bring in to further research in order to write a more fully fleshed out RFP.

## Provider Selection Process *6/7*

### RFQ or RFP Structure

The RFP or RFQ should typically contain the following sections.

- Submission Details
- Introduction and Executive Summary
- Business Overview & Background
- Detailed Specifications
- Terms and Conditions
- Selection Criteria

## Provider Selection Process 7/7

### RFQ and RFP Content

It is usual to request for the following specific information to be included in the Bid:

- The overall VSAT network and service design, including outbound, inbound channel system and VSAT stations.
- Satellite used with detailed coverage zones (transmit and receive).
- Detailed link budgets.
- Description of the hub/teleport, with location, staff, organization, interconnection to terrestrial networks (e.g. internet backbone, ISDN), and extra provided services

For end-to-end service, you should, in addition to the above information, also request for confirmations from the space segment provider, the teleport provider and the VSAT station equipment supplier respectively, that their respective services/products are, indeed, available

## Provider Selection: Factors to be considered

Following is a list of key technical factors that need to be considered during the procurement process :

- feasibility
  - bandwidth capacity
  - reliability
  - Frequency Band
  - Beam coverage
  - Topology
- 
- Access Schemes

All these factors are highly dependent on the intended service. Which ever procurement approach is used, it becomes more easier to “shop around” i.e. to look at cost, once the key technical factors have been determined (comparing eggs with eggs”



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# Questions so far?



## Proposal Evaluation Process <sup>1/4</sup>

This step involves the comparison of Proposals or Bids to determine whether the solutions offered by the Bidders meet your business, functional, technical and financial requirements.

There are a few points to note here:

- Evaluation is only meaningful if you use clear, unambiguous and measurable criteria
- You should determine, in advance, which criteria are **mandatory** and which ones are **non-mandatory**.
- All Bidders should be made aware of the evaluation criteria, including which ones are mandatory or not, upfront.
- Mandatory criteria are scored on a pass/fail basis while it is a common practice to score non mandatory criteria on a “sliding scale”,



## Proposal Evaluation Process <sup>2/4</sup>

### Mandatory Criteria:

- Experience of the Bidder
- Solid financial standing of Bidder
- Majority firm in joint venture or consortium has major role
- Space segment, teleport and equipment guarantees



## Proposal Evaluation Process 3/4

### Non Mandatory Criteria:

These criteria could include:

- Minimum availability and overall performance of satellite link
- Technical characteristics of the Hub including redundancy schemes, size of antenna
- Quality of preliminary project plan including implementation schedule that will meet your target dates for receiving services
- Quality of proposed project management team (from Curriculum Vitas)
- Quality of proposed acceptance testing and commissioning plan

## Proposal Evaluation Process 4/4

### Technical vs Financial Evaluation

A proposal can be accepted on the basis of the technical solution proposed, or the financial proposition or a combination of the two.

It is advisable to conduct an evaluation of both the proposed technical solution and the financial proposal of the Bidder, and the final award made on the basis of a combination of both technical and financial evaluations.



## Negotiation and Contract Award <sup>1/16</sup>

### Negotiations

- Negotiations are an art of their own, acquired through extensive experience and training.
- Negotiations also involve clauses of the contract and culminate in signing the contract. Because of the contractual implications, you should plan to involve your lawyer or provide for some legal consulting in your budget for the negotiation and contracting stages.

## Negotiation and Contract Award 2/16

### Key Points

- You should note that most competitive bidding procedures do not allow you to haggle over unit prices on the assumption that competition should give you the best possible market price in the first place.
- You should also be wary of extremely low prices that appear to be much lower than regular market prices. This may be due to a compromise of quality, for example, a high contention ratio.
- If you do not have your own standard contract template, you may have to use the Bidders own contract format. In fact, it is not advisable to try and draft your own contract as legal fees can be very high. It is far cheaper to have a Lawyer review the Bidder supplied contract.

## Negotiation and Contract Award <sup>3/16</sup>

### Types and length of contracts

A major question usually arising during contracting is how long the contract should be. The answer is not very simple- it should not be too short or too long. A good contract length is 2 to 3 years with a provision for an extension usually of no more than 1 year.

## Negotiation and Contract Award 4/16

### Types and length of contracts

A major question usually arising during contracting is how long the contract should be.

A good contract length is 2 to 3 years with a provision for an extension usually of no more than 1 year.

Contracts more than 5 years should be avoided because:

- ✓ Technology advancement is rapid and a new and more efficient or cheaper technology may arise during your contract period
- ✓ Prices of technology reduce over time either due to newer technologies, competition or maturity.
- ✓ There is a high turnover of companies in the technology industry because of cut throat competition

## Negotiation and Contract Award 5/16

### Types and length of contracts

On the other hand, you do not want a very short contract of say 1 year because:

- ✓ The process of finding another provider can be very lengthy and resource intensive as the steps above may have revealed.
- ✓ Switching costs can be very high as switching may require changing the equipment.
- ✓ VSAT networks can take a while to “settle” of up to 6 months in which period they need constant monitoring and fine tuning to provide optimum performance.

## Negotiation and Contract Award 6/16

### What to include in the contract

- Your lawyer should advise you on the standard clauses that a commercial contract should have, as well as any other clauses to cater for your particular set of circumstances.

## Negotiation and Contract Award 7/16

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**Start Date** can be tied to **date of signature of contract** or **date of start of service provision**. Whichever way it is defined, you should make sure that you start paying for services- bandwidth only after your equipment is installed, tested, commissioned and you have formally signed off.

## Negotiation and Contract Award 8/16

### What to include in the contract

**End dates** should be very clear. It is not enough to state “one year”- you should provide reference e.g. one year from start of services or from contract signature. You should reference the end date from start of services, rather than from date of contract signing because there could be a significant delay between the two as the service provider mobilizes and sets up the service.

## Negotiation and Contract Award 9/16

### Service Level Agreement

The SLA is a collection of measurable performance metrics that ensures that you are getting the service you are paying for all or most of the time. The following metrics are common:

- **Availability**
- **Latency**
- **Mean Time to Restore (MTR)** :this is a measure of the average time it takes to bring your services back on line in case of a failure. If you define the availability, then there is no need to define MTR.

## Negotiation and Contract Award 10/16

### Service Level Agreement

Because SLA involves measurements, you need to be prepared to measure the availability and latency of the service you are getting.

You should require that your service provider monitor and measure the level of service you are receiving and provide you with regular (say monthly) reports which you should compare against your own.

## Negotiation and Contract Award <sup>11/16</sup>

### Enforcing Service Level Agreement

You should be prepared to exact penalties on the service provider in case they do not provide the service to your expectation. There are two ways of penalizing the provider:

**Money back-** for any outage outside the agreed unavailability, the provider should refund some of your monthly payment in cash.

**Service credits-** any outage outside the agreed unavailability, the provider should deduct an amount on the next month's service charge by providing you with a "credit". This is the usual approach undertaken.

## Negotiation and Contract Award 12/16

### Escape clause

You should plan for “escape” clauses that let you get out of or terminate a contract if the provider is not performing to your expectation or if the provider runs into financial difficulties. However, you want to ensure that you receive services up until the last minute. The following escape clauses are useful to negotiate and have included in your contract:

- **Consistent or frequent violation of SLA.**
- **Mergers, Acquisitions or Liquidation**

You should also beware of the provider’s escape clauses. These are usually “hidden” in the Force Majeure section of the contract. You should have your lawyer scrutinize the contract for the provider’s escape clauses, as well as your own escape clauses



## Negotiation and Contract Award <sup>13/16</sup>

### Acceptance testing

It is advisable to explicitly define how and when you will perform acceptance testing in your contract. As noted above, your services start date and start of payments should be linked to acceptance testing and not to the date when the contract is signed.

We could not belabor this point more as it can be a cause of contention with your service provider

## Negotiation and Contract Award <sup>14/16</sup>

### Contract termination

You should be aware of one important fact- unlike most other commercial contracts, VSAT contracts usually have a termination clause that requires you to pay off the remainder of your bandwidth costs through the life of the contract if you decide to terminate the contract.

You should therefore consider this fact carefully when signing long contracts. Nevertheless, you should try to negotiate for contract termination “with no cause” provided you give ample notice of 3 or 6 months without incurring costs for the remainder of the contract portion.



## Negotiation and Contract Award <sup>15/16</sup>

### Review the Preliminary Project Plan

You should insist on receiving and reviewing a draft project plan from your potential service provider during negotiations, and before contract signing.

The draft project plan should include the implementation plan, schedules and proposed or anticipated roles and responsibilities including the capabilities and qualifications of the service provider's staff.

You should be aware of or negotiate how long it will take to begin receiving services, how the service provider will approach implementation and what your obligations are. All these should be agreed upon prior to contract signature.



## Negotiation and Contract Award 16/16

### Signing the contract

Once you are happy with all the contract provisions and clauses, it is time to sign the contract.

You should normally ensure that you have written clearances from your lawyer or legal department if you have one, and of course from your top management to sign the contract. You should also ensure that you follow any special procedures for contract signing imposed by your institution's.

At least two original copies of contracts should be signed, one each for you and the service provider



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**End**  
**Thank You!**  
**Questions?**