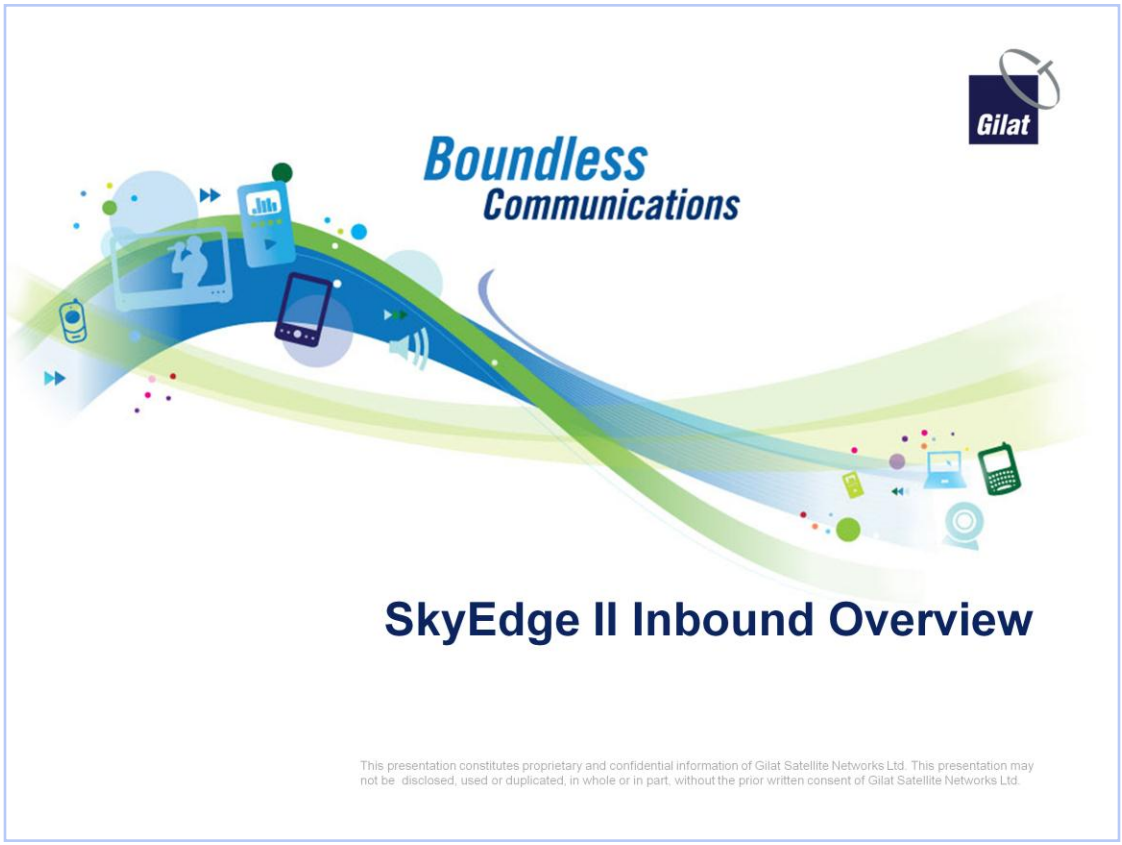


Inbound Channel

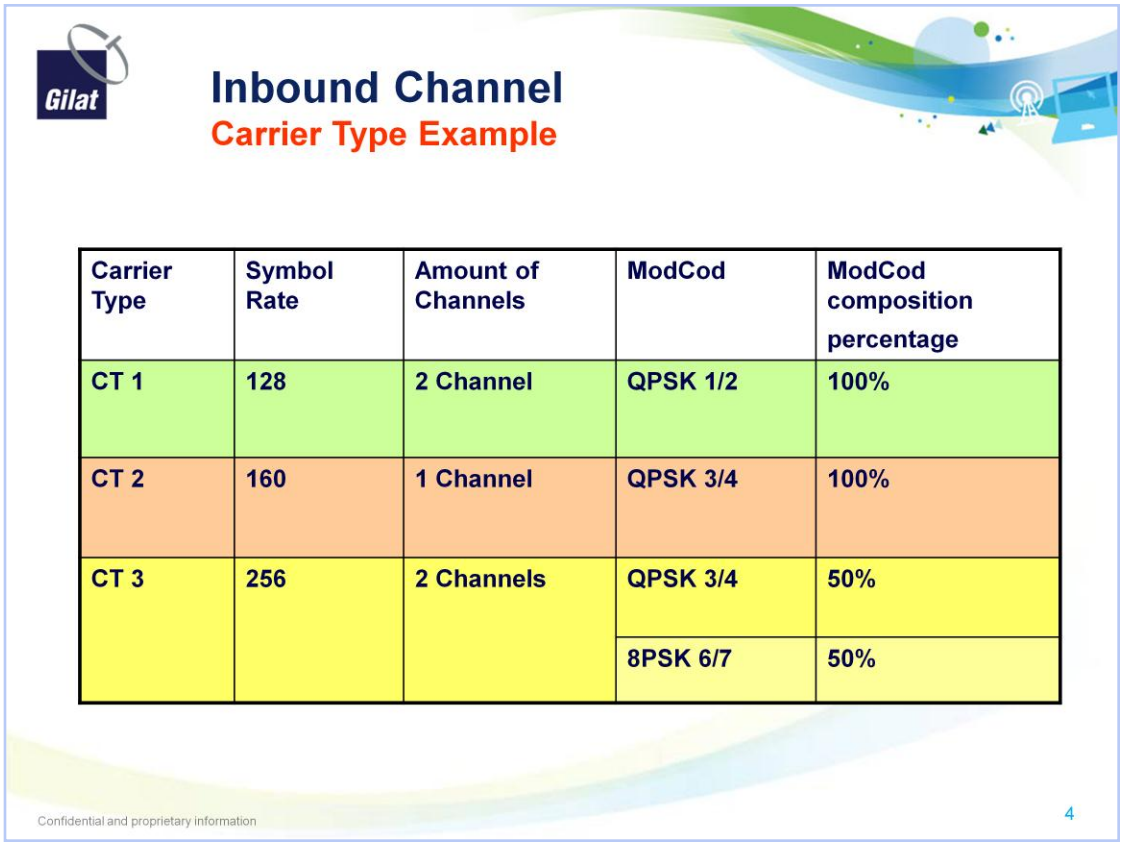
Configuration Parameters

- SkyEdge II Inbound Channel is based on DVB-RCS (EN 301 790)
- Access Scheme is based on (MF-TDMA) Multi Frequency Time Division Multiple Access
- Modulation Schemes
  - QPSK
  - 8PSK
- Coding Scheme
  - Turbo Code
- ModCods Available
  - QPSK – 1/2, 2/3, 3/4, 4/5, 6/7
  - 8PSK – 2/3, 3/4, 4/5, 6/7

Inbound Channel

Carrier Type CT

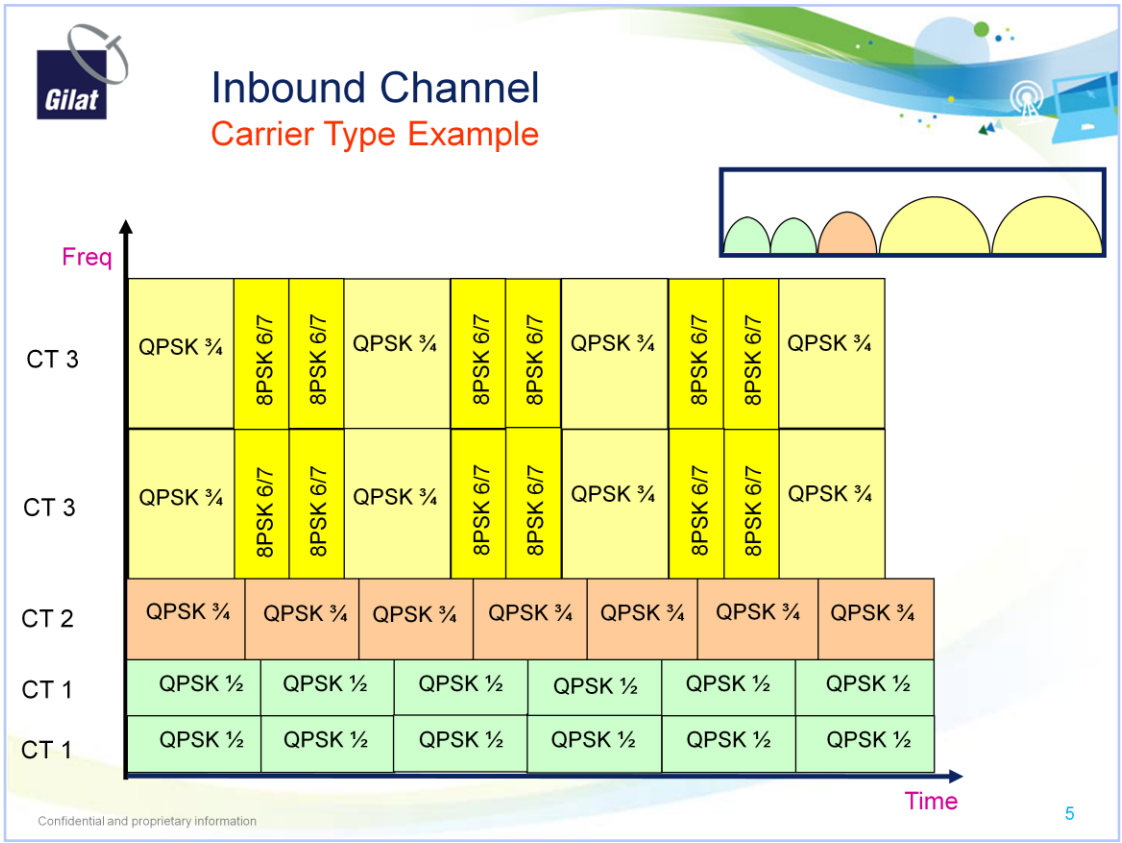
- The Inbound is composed of several physical channels consisting of one or more Carrier Types (CT).
- A Carrier Type (CT) is defined by its symbol rate and an arrangement of ModCods.
  - A Carrier Type is actually a type of channel.
  - Up to four CTs can be configured per HSP
- A Slot Type (ST) Is defined by its symbol rate and ModCod.
  - A Slot Type is actually a type of time slot.
  - Up to eight STs can be configured per HSP
- Each HSP handles it's own time frequency plan (TFP).



Carrier Type	Symbol Rate	Amount of Channels	ModCod	ModCod composition percentage
CT 1	128	2 Channel	QPSK 1/2	100%
CT 2	160	1 Channel	QPSK 3/4	100%
CT 3	256	2 Channels	QPSK 3/4	50%
			8PSK 6/7	50%

In this IB example, there are three different Carrier Types. Each Carrier Type has its own characteristics (symbol rate, ModCods and ModCod composition).
In this example, Carrier Type C has two channels using two ModCods each: 8PSK 6/7 50% of the time plan and QPSK ¾ another 50% of the time plan.

The amount of channels each carrier type may have depends on the IB space segment.

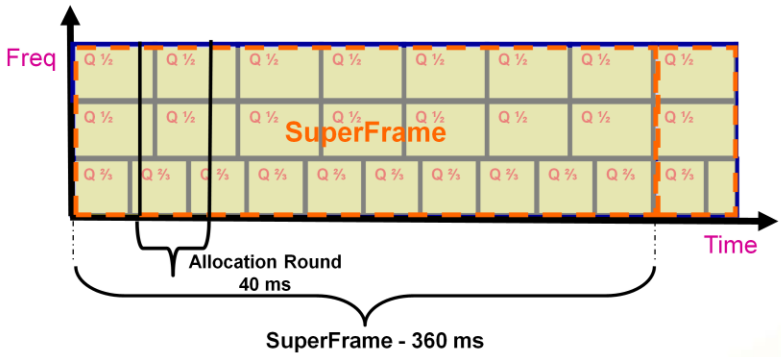


This TFP (Time Frequency Plan) corresponds to the table in the previous slide.
The HSP allocates the more robust carriers at lower frequencies and more efficient carriers at higher frequencies.
The diagram illustrates the relationship between symbol rate and BW. Higher symbol rate channels require more BW.
Because each TS has equal payload (number of ATM cells) different ModCods will result in different TS durations.
TSs of robust ModCods have longer duration of time.

Time Frequency Plan (TFP)

Time Structure

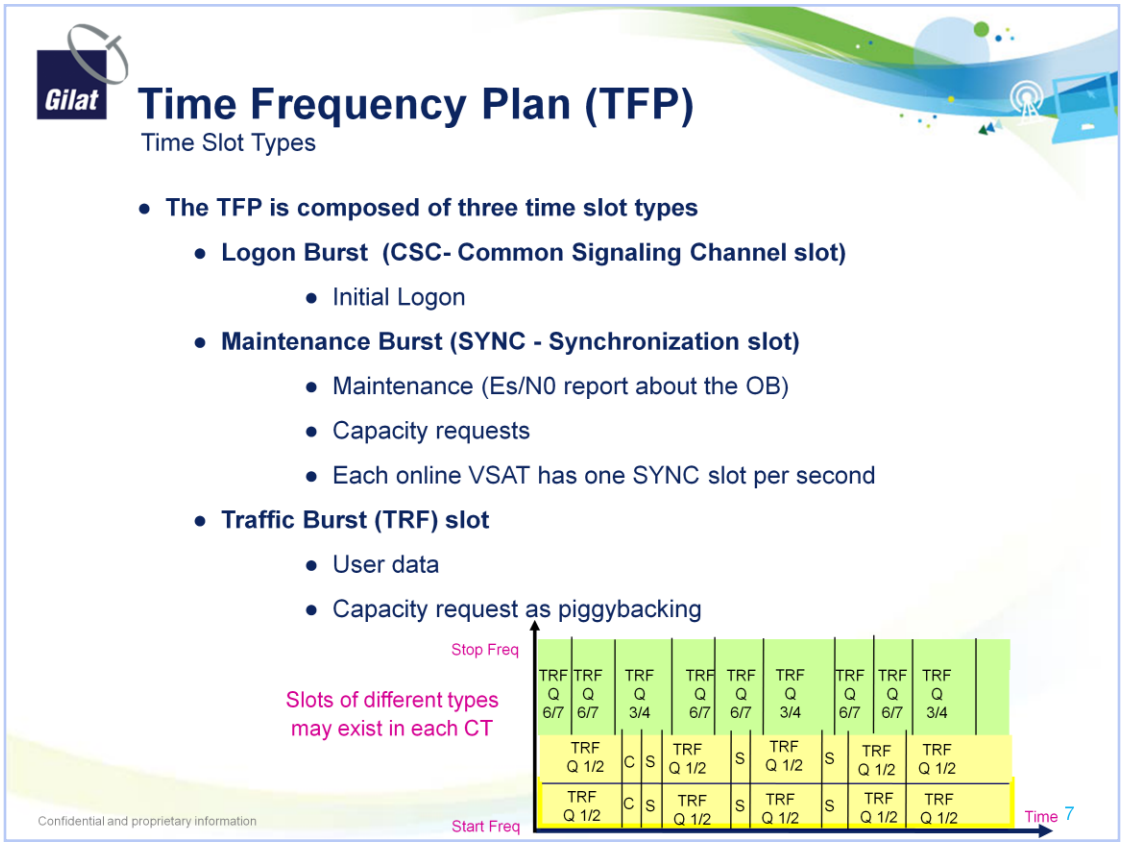
- TFP is constructed as a constant repetition of a SuperFrame.
  - The SuperFrame is the time slot map with a duration of 360 ms.



- Capacity allocation is performed every 40 ms.
  - Each allocation round is independent and generates its own "allocation table" broadcasted to the network.

Allocations are made over short intervals (40 ms) and published to all the VSATs using one of the RCS tables: TBTP (Terminal Burst Time Plan). Each allocation round is independent.

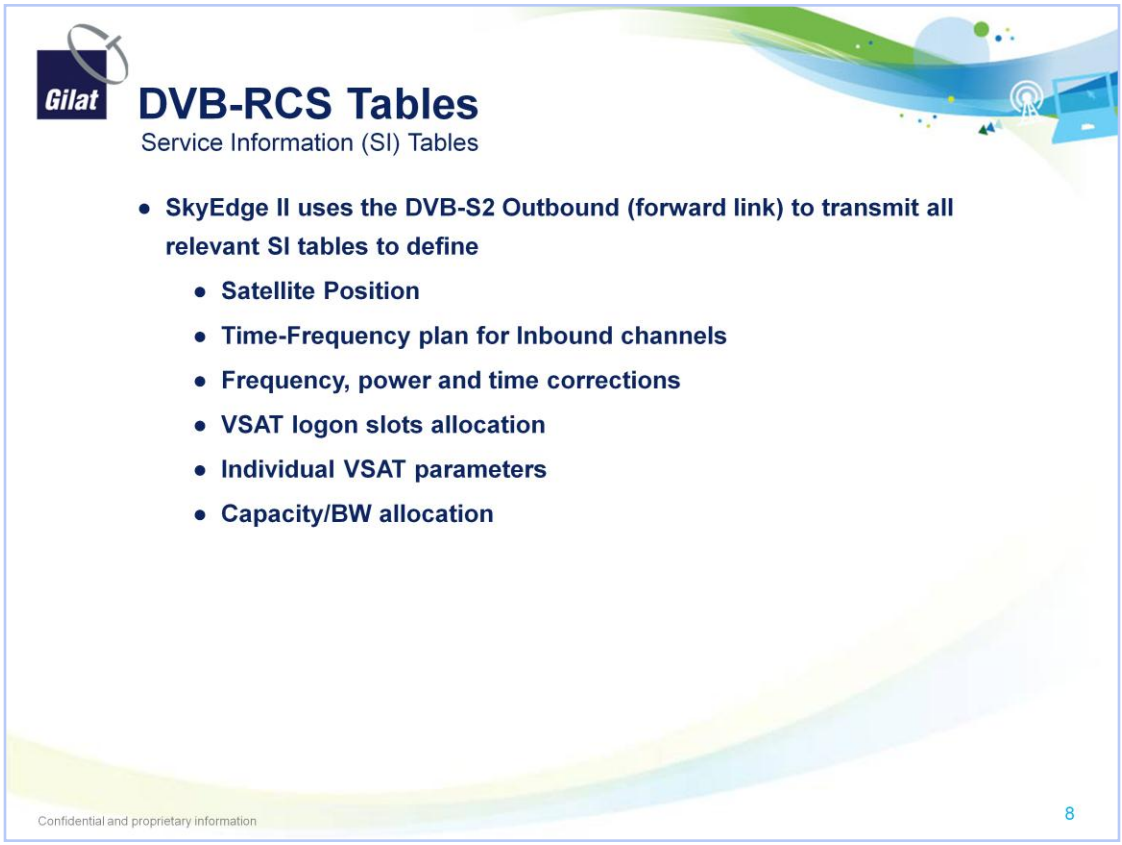
The HSP advertises the structure of the TFP every 10 seconds.



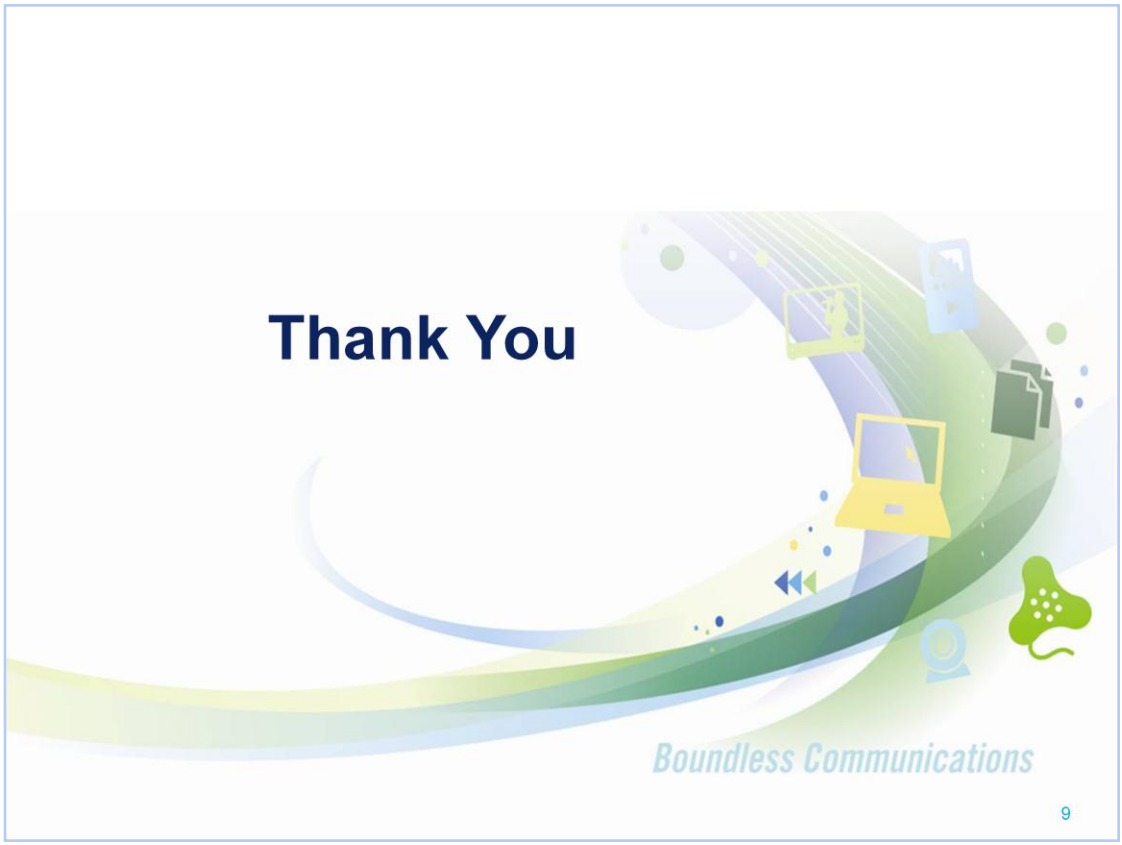
Each type of slot is used by the VSAT for different purposes. Each type of slot carries different type of information.

Common Signaling Channel (CSC) name does not indicate its meaning even though it is used by the standard. It may be called the Logon Slot

The Hub uses the SYNC slot to compute necessary changes in frequency, timing and power.



All tables except the TIM are called SI (Service Information) tables and include a SI header.
TIM table includes DSM-CC (Digital Storage Media Command and Control) header.
The Service Information (SI) header includes information about network-wide tables, table id, table version number of the sub-table, etc.
DSM-CC header includes information about section, Destination MAC address, payload and address scrambling control, LLC/SNAP encapsulation, etc.


Thank You
Boundless Communications
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