

Current SATCOM Bonding Products

- There are three channel bonding services currently on the market, I think all use the same technology.
 - BGAN Converge by Inmarsat
 - BGAN HDR by Inmarsat
 - Skybond by Satcom Direct
- All bond Inmarsat's L-band channels.
 - BGAN Converge and BGAN HDR bond 2 channels
 - Skybond bond 2 or 4 channels, I think 2 and can aggregate 4
- BGAN Converge and BGAN HDR are more or less the same thing except
 - BGAN Converge is for SATCOM/mobile hotspots
 - BGAN HDR is for satellite broadcasters/news







Service	Throughput	
Inmarsat - BGAN Converge Hardware - Cobham SATCOM EXPLORER 710	800 kbps bi-directionally	uses reliable commercial BGAN channel bonding to deliver high-speed, secure mission-critical communications
Inmarasat Service - BGAN HDR Hardware - Cobham SATCOM EXPLORER 710	1Mbps	<p>You can double the streaming rates by bonding two terminals together, enabling connection speeds over 1Mbps, which was previously only possible on a VSAT uplink.</p> <p>Cobham's small and light EXPLORER 710 is a plug-and-play device. It features a built-in bonding capability, enabling connection speeds of more than 1Mbps – previously only possible on a VSAT uplink.</p>
Satcom Direct - SkyBond	1.4 mbps	can aggregate up to four channels together, providing a larger data pipe delivers fast inflight data speeds worldwide by combining multiple streaming channels from Inmarsat’s SwiftBroadband service
Inmarsat – SwiftBroadband SkyBondSM (Satcom direct) streaming combines up to 4 channels for speeds up to 1.4 mbps	432kbps per channel	IP-based packet-switched service offering 'always-on' data. SwiftBroadband will allow for a combination of packet switched services to run concurrently. For example, a streaming class can be used for video conferencing or used by an application while internet browsing and sending emails is also happening in the background over contended IP.
Inmarsat - Global Xpress	50Mbps downlink 5Mbps uplink	Inmarsat Global Xpress Interoperable with MILSATCOM Ka-band
Satcom Direct Router (SDRM) - Hardware	L-Band, Ku-Band, Ka-Band, X-Band	It automatically selects the preferred connection and keeps it updated continuously. It is loaded with services that compress and cache data, so that

Satcom Direct Service SkyBond Overview

- Hardware – Satcom direct router
- Throughput - 1.4 mbps (4 Swiftbroadband channels)
- Year Introduced – 2015
 - 2015 publication – “Customers with a Satcom Direct Router (SDR) can use Satcom Direct's exclusive SkyBond service to combine up to 2 channels, currently, providing speeds of up to 1.3 Mbps. This is approximately two times faster per channel than traditional SwiftBroadband in-flight connections.”
 - 2014 publication – “**Satellite Beach, Florida | December 8, 2014**– Coming Q1 2015, the ***SDR will support the ability to bond and aggregate multiple Inmarsat SwiftBroadband streaming connections***, allowing customers to achieve up to 1.6mbps of throughput. Customers will also have the additional benefits of acceleration, compression and caching that the SDR brings to the market. When available, **the SDR will also support Inmarsat's new High Data Rate (HDR) streaming services.**
- With the Satcom Direct Router (SDR) and SDC's custom built value-added services, such as SkyBond ***channel bonding and aggregation*** solution, SDC also enables the fastest **SwiftBroadband** inflight data speeds worldwide.
- Another important aspect of the SDR is the SkyBond channel ***bonding and aggregation service***. According to Satcom Direct, this delivers fast inflight data speeds worldwide by combining multiple streaming channels from Inmarsat's SwiftBroadband service. This optimizes the streaming of video and music, and makes video conferencing more viable during flights.
- I think it uses the same technology as BGAN services to bond 2 channels and then aggregate.
- Sold to the US Government and commercial airlines

Satcom Direct Router Overview

✦ Exclusively from Satcom Direct

APP/Feature	What	How	Why
 GlobalVT®	App that lets you use your own smartphone, number and caller ID, in flight	Supports voice calls and SMS messaging using your device	Increases your availability and productivity through the use of your phone anywhere in the world or above it*
 SDR™	The SDR app lets you view your live connection status and includes a real-time flight tracker	The SDR detects and indicates which devices are connected in the cockpit and cabin, as well as the position of the aircraft and current trip status	So you are aware of the status of your flight and device connectivity at all times while on board
	Cost-effective GSM connectivity while on the ground, anywhere in the world	The SDR senses when the aircraft is on the ground and seamlessly switches users to 3G service	To reduce cost by using cellular service versus a satellite network, when available
 ACCELERATED BY	Compression and acceleration service that increases data throughput	Compresses and caches data	To allow the maximum amount of information to travel quickly and securely to your device; you get a fast, secure connection which boosts your efficiency
	A dedicated IP address for your aircraft that enables uninterrupted data and VoIP calls, wherever you fly	Data packets are routed via the designated IP address so that connection is maintained as you switch between airborne and terrestrial networks	So you can be productive at every altitude, and the aircraft IP address can be recognized as an extension of your corporate network so that your corporate network security protocols can be applied
	Channel bonding and aggregation services	Aggregates up to four channels together, providing a larger data pipe and delivering speeds up to 1.4 Mbps of throughput	Brings higher bandwidth advanced features to the aircraft like streaming and video conferencing

*With compatible device, within network coverage.

Satcom Direct Government Awards

Herndon, VA/12 April 2018 –

Satcom Direct Communications (SDC), the leading provider of Inmarsat aeronautical satellite connectivity services to the U.S. Military, Department of Defense (DoD), state and local agencies has been re-awarded a Blanket Purchase Agreement (BPA) by the U.S. Defense Information Systems Agency (DISA). This five-year agreement, which is a renewal of the previous BPA contract awarded to SDC in 2012, allows **SDC to provide secure voice and broadband data services to support global aeronautical missions for the DoD and other federal agency bodies**. The contract is also an important milestone in the military government market, as this will be the first US government procurement contract in place for **Aeronautical Inmarsat GX services**. The agreement has a ceiling value of \$245 million over the life of the contract, which is 1 Base Year and 4 Option Years.

U.S. government users will continue to benefit from easy ordering access to quickly establish worldwide connectivity on board all Inmarsat-equipped aircraft via SDC. As **an Inmarsat Tier 1 Distribution Partner and Value-Added Reseller**, SDC supplies the full range of Inmarsat L-band solutions, including SwiftBroadband, BGAN, FleetBroadband, Swift64 and Classic Aero services, as well as the new Ka-band service, Global Xpress (GX), to U.S. government users. SDC optimizes and enhances the connectivity experience with the provision of Inmarsat's Global Xpress Ka-band highspeed broadband communications satellite network, providing seamless reliable worldwide mobile connectivity at speeds up to 15 Mbps. With the Satcom Direct Router (SDR) and SDC's custom built value-added services, **such as SkyBond channel bonding and aggregation solution**, SDC also enables the fastest SwiftBroadband inflight data speeds worldwide.

Satcom Direct Government Awards

FEDERAL CONTRACT AWARDS

Link to Award

Add to Pipeline

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Purchase Order FA445217P0016

Purchase Order \$226.5k / \$372.9k

Updated Sep 23 2019

Funding Status

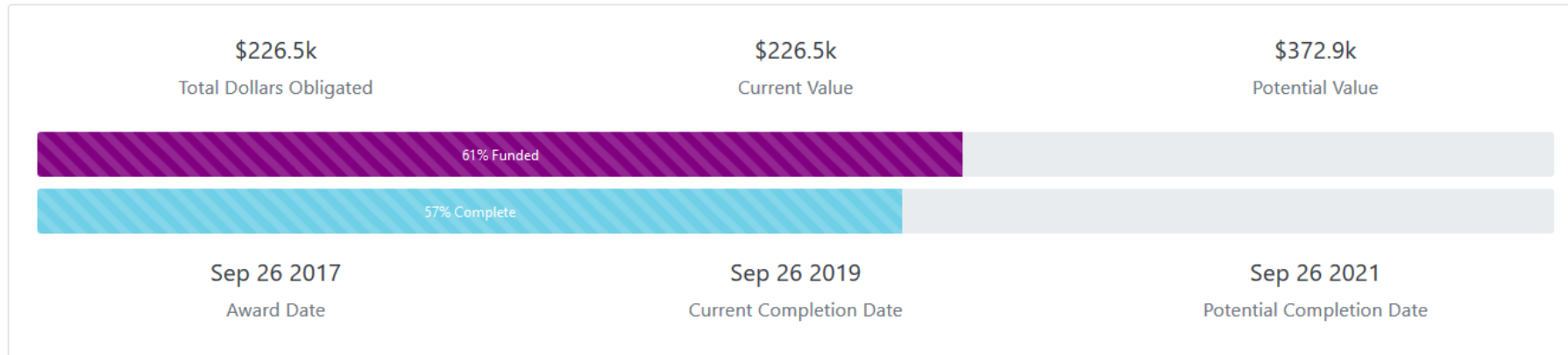
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Updated Federal Contract Award

Air Mobility Command (DOD - USAF)

Sep 23 2019

Sep 26 2019 + 364 d(s)

Changed Completion Date

\$76.5k / \$372.9k

Purchase Order FA445217P0016 is a Firm Fixed Price Federal Contract Award. It was awarded to Satcom Direct Communications, Inc. on Sep 26, 2017. The purchase order is funded by the Air Mobility Command (DOD - USAF). The potential value of the award is \$372,929. The NAICS Category for the award is 517410 - Satellite Telecommunications. The PSC Category is 7030 - Information Technology Software

SKYBOND SUBSCRIPTION AND HOSTING ENVIRONMENT

Product	Band Used	Bandwidth	Unit Cost	Monthly Cost	Notes
Iridium Go!	Intersatellite and ground control links take place in the Ka-band frequencies. Telephone and messaging communications take place in the L-band frequencies.	Data speed up to 2.4 kbps	~\$690	~\$60	Email attachments of any size will take minute or hours to transfer, and a single webpage would take 5 to 10 minutes to load. Connectivity to the Internet with the Iridium Go should be considered an emergency backup solution
Globalstar Sat-Fi2 Satellite Hotspot	Gateways are in the C-Band(6875-7055 MHz) and C-Band(5091-5250 MHz) and downlinks are S-Band(2483.5-2500 MHz) and L-Band(1610-1618.725), respectively.	data speeds up to 72 kbps	~\$500	~\$50	Browse the web with our customized and compressed browser, Sat-Browse. Mostly only North America coverage. Leverages Globalstar'ssecond-generation ground infrastructure –higher speeds, enhanced capacity, improved performance
Wideye iSavi IsatHub	L-band constellation FYI Inmarsat's sixth-generation (I-6) fleet represent a step change in the capacity of Inmarsat's L-band services feature Ka-band payloads hosted on L-band satellites. The first satellite is	up to 384 kbps download; 240 kbps upload (Standard TCP-IP)	~\$1200	~\$20	Wi-Fi 802.11 b/g/n up to 100' (30 m) Our comprehensive narrowband services provide simultaneous voice and data, globally. They include Standard IP for office applications and guaranteed, on-demand Streaming IP rates for mission-critical operational needs.

Product	Band Used	Bandwidth	Unit Cost	Monthly Cost	Notes
Cobham Explorer 510 BGAN Terminal	Operates on the Inmarsat L-band satellite network	up to 464 Kbps	\$2,425.00	~\$125	Next level up if we are interested
Cobham Explorer 710 BGAN Terminal	Operates on the Inmarsat L-band satellite network	Delivers an expected streaming rate of about 650 kbps	\$5,465.00	~\$125	

<https://www.inmarsat.com/news/high-data-rate-bgan-terminal-starts-video-revolution/>

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<https://www.satcomdirect.com/2018/04/12/satcom-direct-communications-re-awarded-the-aeronautical-blanket-purchase-agreement-to-provide-worldwide-voice-and-broadband-data-connectivity-for-u-s-government-and-department-of-defense/>

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