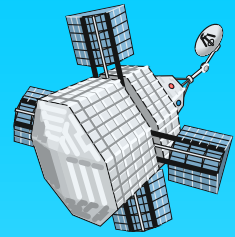




C-DOT's Satellite Wi-Fi (C-Sat-Fi[®])



C-DOT Satellite Wi-Fi (C-Sat-fi) is an innovative integration of VSAT Technology with C-DOT BBWT* Wi-Fi Terminals. The satellite connectivity is used as Backhaul link for the complete village. C-DOT BBWT Wi-Fi such as Solar Wi-Fi is used for Hotspot and C-DOT Long Range Wi-Fi is used as Point to Point & Point to Multi Point links to cover the complete village.

The Satellite and internet bandwidth can be provided by any existing Satellite operators and ISPs.

The system is optimized to support concurrent VOIP/Voice calls. Local content servers are placed to provide static content locally over C-DOT Manoranjan platform and reducing the use of expensive satellite bandwidth and making the bandwidth available for basic connectivity.

The Services can be offered by either ISPs, or VLEs by enrolling under CSC

Architecture for network with C-DOT Satellite Wi-Fi to extend broadband to users

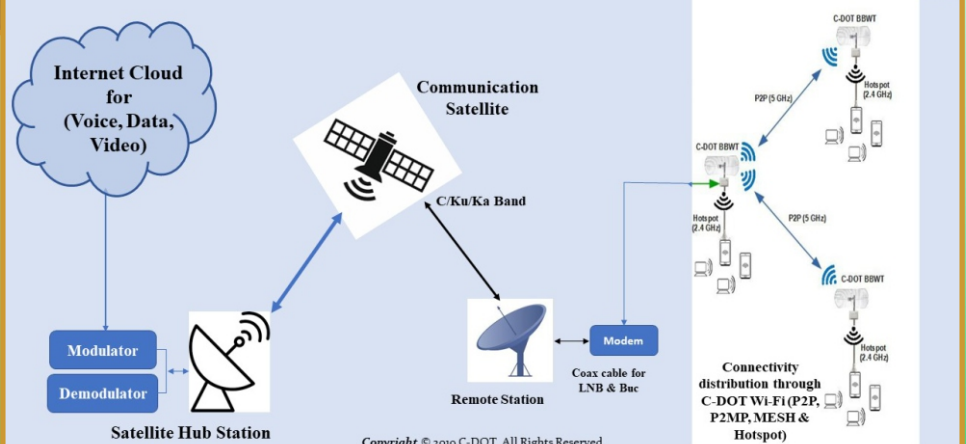
Network Elements include:

- Wi-Fi Access point to create Wi-Fi hotspot around area
- Satellite Remote station (VSAT modem or smartLNB for the backhaul connectivity).

*BBWT: Broadband Wireless Terminal supporting IEEE 802.11 a/b/g/n/AC 2x2 up to 4x4 MIMO technology

Architecture for this network with Wi-Fi to extend broadband from POP location (Satellite backhaul location) / village headquarter and using Wi-Fi as a backhaul to connect bigger areas, using point to point Wi-Fi as backhaul.

Digital Connectivity using Satellite Wi-Fi



C-DOT Total Enterprise Communication™

Total Enterprise Communication (**TEC**) architecture enables any service provider to create a communication network at any location i.e. urban, rural, remote or unconnected using indigenously developed low cost C-DOT Technologies and provide voice, video and data services to users in most efficient way.

TEC architecture consists of following technologies/product:

- **C-DOT Satellite Wi-Fi (C-Sat-fi):** To provide internet backhaul at any location using C/Ka/Ku band satellite connectivity through Satellites.
- **Service Switch:** To function as Service Switch to provide local connectivity distribution. It has added functionality of fibre termination which can be utilized if fibre is available in the given location.
- **Broadband Wireless Terminals (BBWT):** To create Wi-Fi hotspots and extending connectivity in a village through P2P, P2MP or Mesh configurations.
- **Public Data Office (PDO):** To enable any Village Level Representative to establish internet business and resell data in sachets.
- **Content Server:** To provide local and relevant content/videos etc. through C-DOT MANORANJAN platform which will reduce the satellite bandwidth consumption.
- **VOIP Phones:** To enable home users to make voice calls over IP Network.
- **ATA:** To provide connection through normal POTS phone for making voice calls over IP network.
- **WiDHWAN:** To provide Wi-Fi IP PBX functionality.
- **SAMVAD Application:** Provided Chat, voice and video call functionality using C-DOT Soft switch & Chat server hosted at central location. SAMVAD users connect to the network over Wi-Fi connectivity.
 - a. C-DOT Softswitch: To provide voice connectivity
 - b. Samvad Chat Server: To provide secure chat facility
 - c. Samvad Application Server: Sharing of files/photos/videos etc.
- **GPSU:** The system can be powered on using C-DOT Green Power Supply Unit.

Major Services to be delivered

- Govt. to Citizen Services
- Agricultural Services
- Business to Citizen Services
- Telemedicine Services
- Financial/Banking Services
- e-Bazaar Services/Tourism Services
- Education Services
- Entertainment/Infotainment Services
- Communication Network during Disaster

Technical Specifications of C-Sat-Fi System

Wi-Fi System

- Complied to 802.11 a/b/g/n/ac
- Outdoor solution supporting 3 radios covering 3 sectors with three patch/Omni/sector/grid antennas
- Data rate upto 866 Mbps
- 1 Gbps Copper/Optical Ethernet Interface

VSAT system

- Forward Channel: DVB-S/S2 adaptive coding and modulation (ACM) with carrier rate upto 235 Mbps
- Return Channel: MF-TDMA with inbound rates up-to 512 Kbps or F-SIM with up-to 160 Kbps
- Satellite Bands: C/Ku/Ka-band
- Data Interface: 10/100/1000 Base T RJ-45 & 802.1Q VLAN
- Dish size: 76cm to 1.2 meter depending on the region regulatory requirement and the modem (Conventional VSAT with indoor modem plus outdoor BUC/LNB or smartLNB) and Satellite bands used.

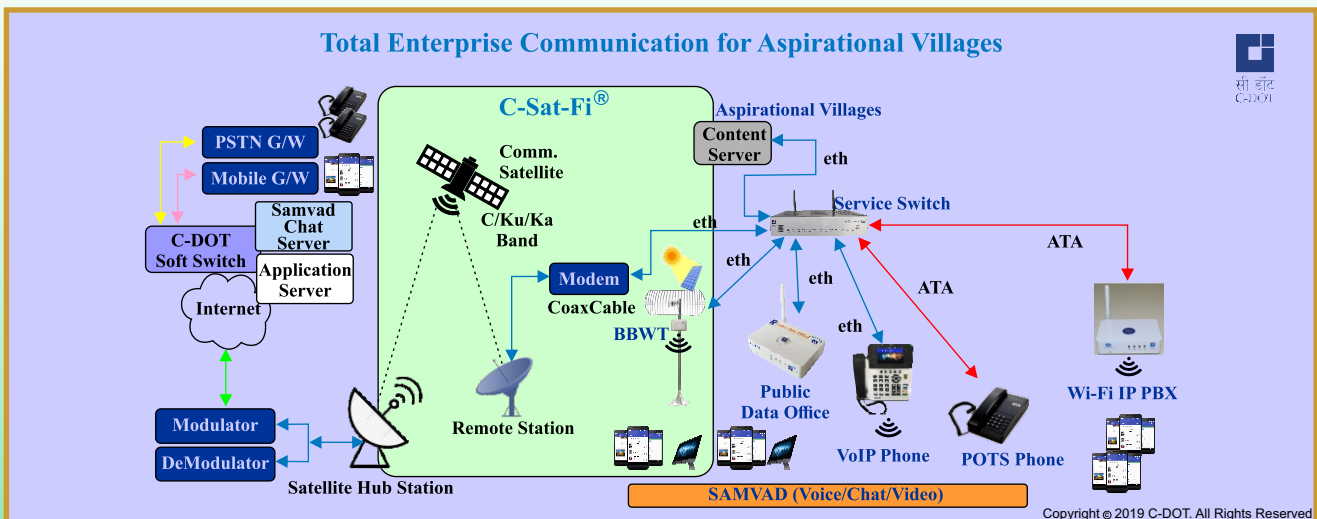
Power

- Dual Power Feeding: 12-75V DC, 100-240V AC via external Adapter
- Power feed from C-DOT Solar based Green Power Source as well as Grid Power
- Power Consumption: max 12W

Environmental

- Out Door Enclosure: All Weather case; IP65/IP67
- ODU operating conditions: -20°C to +65°C
- Humidity out door Unit: Up to 90% non-condensing

C-Sat-Fi is Ideal for Gram Panchayats connectivity (of very remote and unconnected locations) and Disaster Management Locations.



Centre for Development of Telematics

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