



## SATCOM IW

### What is SATCOM IW?

- The SATCOM Integrated Waveform (IW) is an enhanced method of multiplexing radios on the same channel.
- It uses carrier phase modulation (CPM) to allow for more access on the same channel. CPM was implemented in radios to provide higher data throughput on the UHF dedicated satellite channels in LOS mode.
- It is the replacement to Demand Assigned Multiple Access (DAMA) SATCOM.
- It is a flexible waveform structure that allows communication accesses to be tailored based upon operational need.

### Why do we need SATCOM IW?

- Military services continue to increase their usage of tactical satellite (TACSAT) terminals, with insufficient channels to support user requests.
- Aging satellites continue to degrade while waiting for replacement constellations.
- Mobile User Objective System (MUOS) development continues to slip, so no near-term replacement is available.

### How does SATCOM IW work?

- One channel is assigned as the master and contains the system forward orderwire (SFOW).
- All other channels fall under the master channel and can be either 25-kHz or 5-kHz.
- Each channel has its own format that is changeable upon user demand.
- Time slots for ranging and other communications can be arranged based on these same requirements.
- Updates are also obtainable from preplanned update forward orderwires (PUFOWs) transmitted on other channels.

### What are the benefits of SATCOM IW?

- Made simpler, nearly 1 step to communicate.
- Waveform structure allows communication accesses to be tailored based upon operational need.
- Data rates up to 19.2 kbps.
- Provides up to 14 networks at 2400 bps each, thus supporting Narrowband Voice Operations with Mixed Excitation Linear Prediction (MELP).
- Waveform capability is transparent to the warfighter (Phase I).
- Minimal impact to fielded radios (requires only a software upgrade in most cases).
- Minimal operator intervention (waveform sends sufficient information to set up radio services itself).
- Manufacturer implemented (for maximum simplicity).
- Ease of use (based upon manufacturer implementation, with limited training requirements).
- Greater access on each channel.
- Flexibility of services on each channel (to provide the most bandwidth to each military service).
- Interoperable with DAMA SATCOM.

### Is SATCOM IW currently available on any handheld radios?

- SATCOM IW has been approved for only one handheld radio—the AN/PRC-148 JTRS Enhanced MBITR (JEM). Software release is anticipated in December 2010.