

UAT-WP-7-02

25 September 2001

RTCA Special Committee 186, Working Group 5
ADS-B UAT MOPS
Meeting #7

Summary of UAT Waveform Testing

Presented by Chris Moody

Background

- “Tuning” the UAT waveform to the expected interference environment has been a major activity of the UAT MOPS WG to date
- Waveform level changes have been made as a result of simulation models developed by JHUAPL and MITRE
 - increases to Reed Solomon Forward Error Code rates
 - narrowing the IF filter BW
 - reduction in synchronization threshold
- The MOPS WG plans to have a small number of Capstone UATs modified for purposes of:
 - validating simulations
 - developing practical and effective MOPS tests for waveform compliance

Plan of Action

- MOPS Test Subgroup has agreed on a Statement of Work for UAT modifications at UPSAT. Capstone Program will fund/authorize the work.
- Two levels of testing will be performed against various conditions
 - Message Error level-->measures net effect on performance for a limited set of environments. Used for “spot check” of simulation models
 - Bit Error level--> for detailed model validation, requires more control of signal and interference environment and more sophisticated measurement
- DoD will support those portions of testing requiring select L16 and DME interference environments. Support provided through Joint Spectrum Center (JSC).

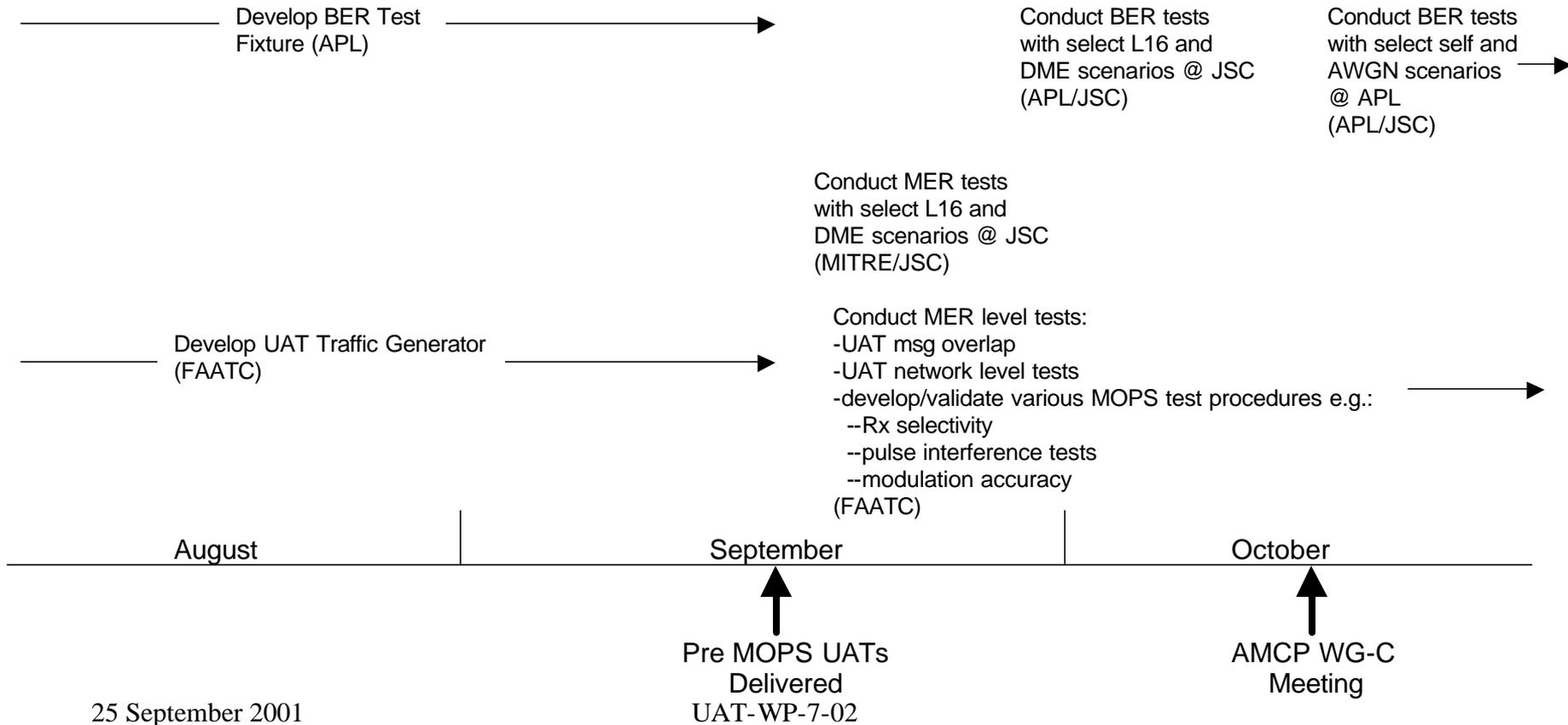
Units to be Modified per the SOW

Units to be fitted for new filters as follows per Table below:

Serial Number	6021207 (purchased under Capstone contract)	6021210 (purchased under Capstone contract)	6021215 (purchased under Capstone contract)	6028373 (purchased <u>outside of</u> Capstone contract by FAA/ASR)
Frequency	981	981	966*	981
Installed filter when shipped after modification	1.2 MHz	1.2 MHz	0.8 MHz	0.8 MHz
Additional rx PCA to be included for field changeout	1.5 MHz	0.8 MHz, 1.5 MHz	NONE	1.2 MHz, 1.5 MHz
EPROM (installed)	1	1	1	1
EPROM (spare)	1 for 1.5 MHz rx PCA	1 (for 1.5 rx PCA)	0	1
Ship to:	MITRE 7515 Colshire Dr McLean Va 22101- 7508 M/S N570 Attn: Chris Moody	FAA WJHTC ACT-350 Atlantic City Intl Airport Atlantic City NJ 08405 Attn: Tom Pagano	MITRE 7515 Colshire Dr McLean Va 22101- 7508 M/S N570 Attn: Chris Moody	FAA WJHTC ACT-350 Atlantic City Intl Airport Atlantic City NJ 08405 Attn: Tom Pagano

* to first be converted to 981 under previous Capstone contract while these modifications are
being made.

Near-term Timeline and Responsibilities



Related Action Items

- Finalize interference scenarios needed for the MER tests with L16, DME and forward to JSC (MITRE)
- Provide test requirements to JSC for BER testing (APL)
- Validate spectral conformance of DME source (JSC)