



# ATIS Technical Overview

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# STARCASTER ATIS SYSTEM

## **Technical Overview**



## Course Objectives

- Purpose: To provide technical maintenance personnel with knowledge necessary to perform maintenance functions on the StarCaster ATIS System.
  
- Reference Materials:
  - *StarCaster ATIS Installation and Configuration Manual*
  
  - *StarCaster ATIS Operations Manual*



## Agenda

- Introduction
- System Overview
- Graphical User Interface
- Maintenance Functions
- Error Messages
- Hardware Components
- Software Configuration
- Ongoing Maintenance Activities



## StarCaster ATIS Functional Overview

- ATIS - Automated Terminal Information System
- Located in ATC Tower
- Designed to allow ATC personnel to create and broadcast ATIS messages
- ATIS Messages are created and monitored at StarCaster Workstation
- Weather data is automatically input via IDS5/serial
- ATIS messages are broadcast via radio transmitter, telephone dial up and Datalink (optional)

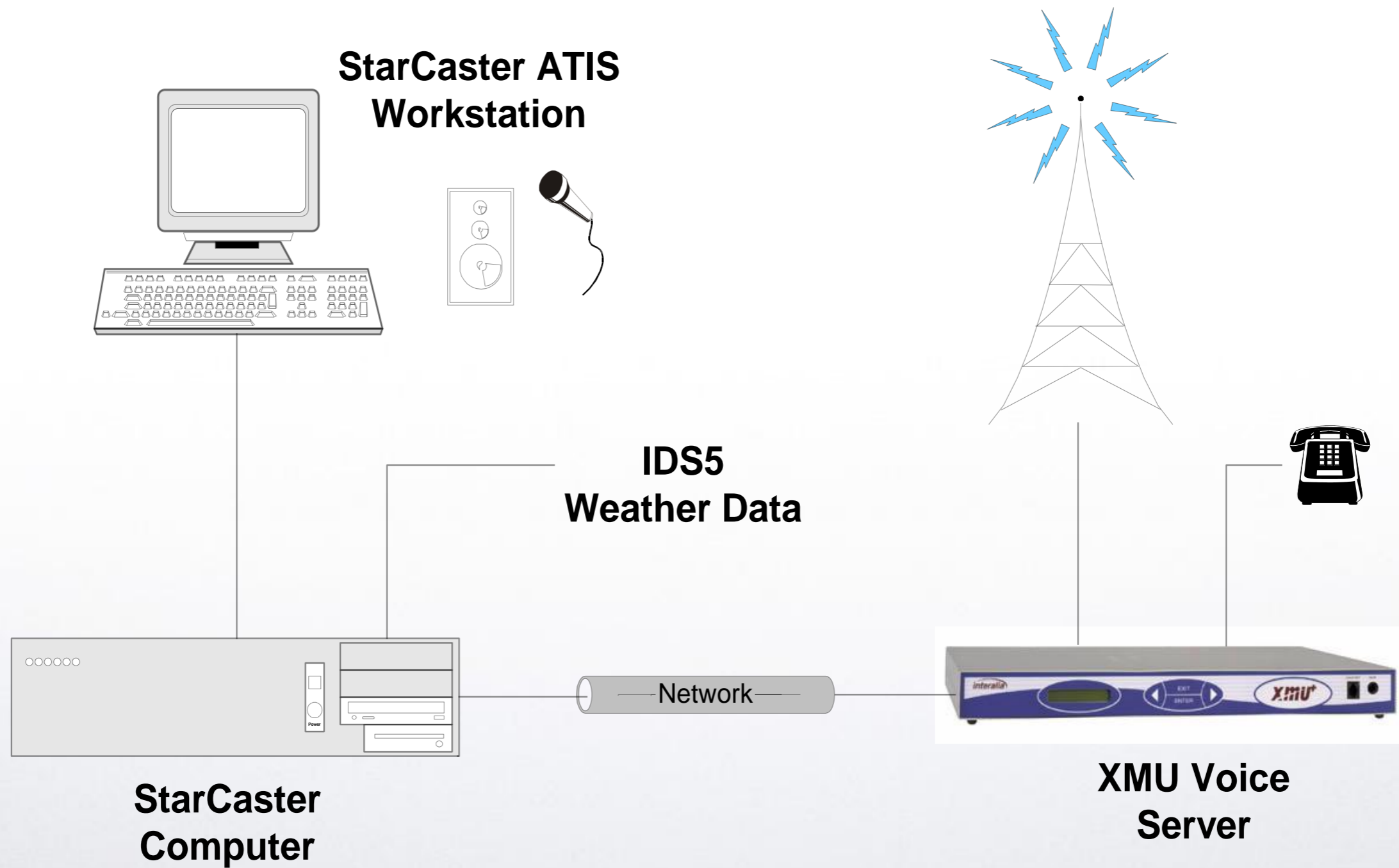


## StarCaster ATIS System Configuration

- StarCaster ATIS Workstation:
  - StarCaster ATIS computer (PC): Windows XP, Vista or 7
  - Video monitor, keyboard, mouse
  - Audio recording/playback equipment
  - Located in tower cab
  
- Interalia XMU+ Voice Server:
  - Located in equipment room
  - Provides audio output and PTT control to radio transmitter(s)
  - Provides dial-up telephone access

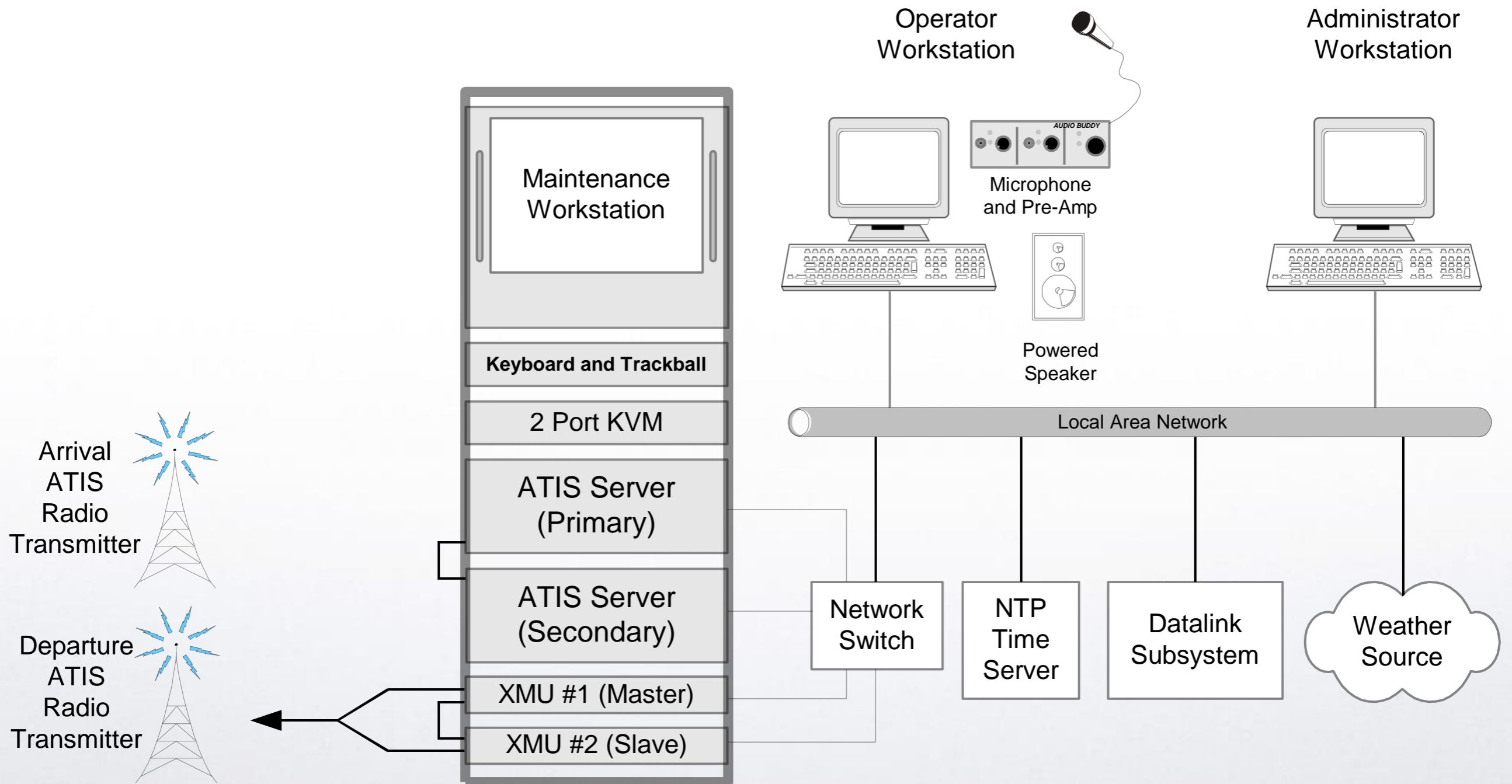


# StarCaster ATIS - System Overview





# Redundant ATIS Deployment







## StarCaster User Interface

- ATC and Maintenance personnel interact with StarCaster at the ATIS Workstation
- Windows-based application
- Application launched from **StarCaster ATIS** icon on Windows Desktop
- After launch, displays Current ATIS page
- Standby ATIS message is broadcast
- Exiting software is under password control
- When software is shut down, broadcast is terminated



## StarCaster User Interface (cont'd)

- Contents of main application window
  - Current ATIS page - used by ATC
  - New ATIS page - used by ATC
  - Fixed Messages page - used by ATC
  - Configuration page - used by Maintenance
- Maintenance Functions are under password control
- ATC Functions do not require password



StarCaster ATIS



# VANDENBERG TOWER (Demo)



Current ATIS | **New ATIS** | Fixed Messages | Configuration

ATIS English Text

VANDENBERG AFB, STAND BY FOR NEW ATIS MESSAGE.

Exit

Speak

 **STR** 13:30:00



# Maintenance Functions

- All Maintenance Functions are performed at StarCaster ATIS Workstation
  
- Maintenance Functions on Configuration page:
  - Change speech rate
  
  - Access log files
  
  - Change password
  
  - Display system information
  
  - Change XMU IP address
  
  - Exit the program (terminate ATIS broadcasts)
  
- All under password control



StarCaster ATIS



# VANDENBERG TOWER (Demo)



Current ATIS | New ATIS | Fixed Messages | Configuration

## Speech Rate

- Normal
- 5% Faster
- 10% Faster
- 15% Faster
- 20% Faster
- 25% Faster
- 30% Faster

Change

## Technical Maintenance

Log Files

Change Password

About...

XMU+ IP Address

Exit

 STR 15:38:44



## Change Speech Rate

- Modifies the speech rate of audio output for ATIS messages
- "Normal" speech rate = 100 words per minute
- Procedure
  - Select radio button for new speech rate (15% Faster)
  - Click on **Change** button
  - Click on **Yes** button to confirm rate change
- All new ATIS messages will have new speech rate

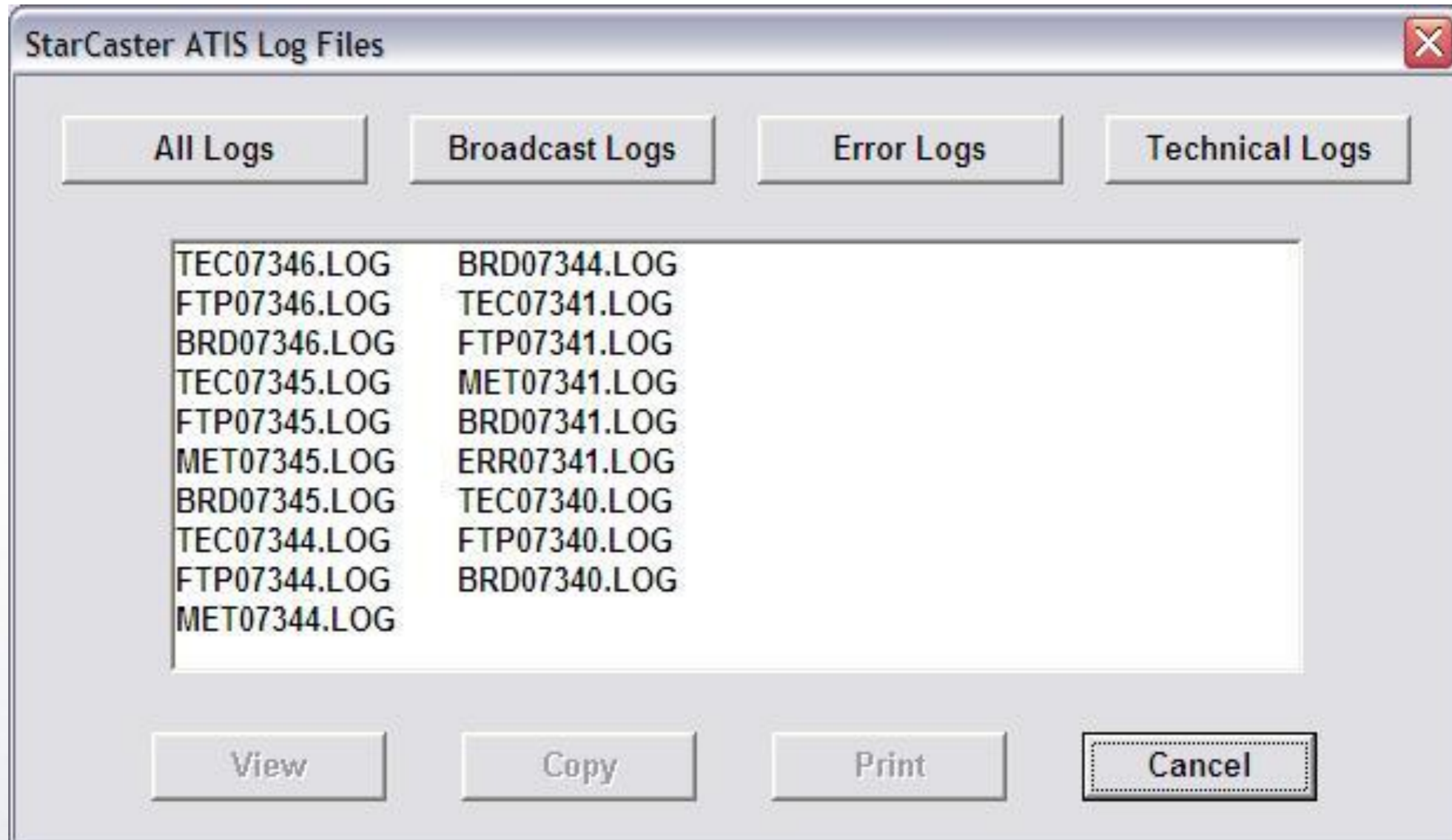


## Access Log Files

- StarCaster System creates daily log files
  - Log files may be viewed, copied or printed
  - Log files remain on system for 30 days
- Procedure
  - Click on **Log Files** button
  - Enter Password
  - Displays Log Files dialog box
  - Log file types: TEC, FTP, BRD, MET, ERR
  - Click on log file, then select **View**, **Copy** or **Print**



# Maintenance Functions







## Technical Log Files

- Contents: Technical errors and actions
- Naming Convention: TECyynnn.LOG  
where yy = year, nnn = day
- Example: TEC08001.LOG (January 1, 2008)
- Contents:
  - Date/time of technical errors
    - No input on AFTN serial line for 15 minutes
  - Date/time of technical actions
    - Speech rate change
    - Access log files
    - Startup and shutdown of program



# Log Files

```
TEC08196.LOG - Notepad
File Edit Format View Help
08.07.14 21:28:57
Program shutdown.

*****
08.07.14 21:24:26
Program startup.

*****

08.07.14 21:32:46
Speech rate changed to 15% Faster.

*****

08.07.14 21:33:39
Log file viewed: TEC08196.LOG

*****

08.07.14 21:34:08
```



## Broadcast Log Files

- Contents: Text of ATIS messages
- Naming Convention: BRDyynnn.LOG  
where yy = year, nnn = day
- Example: BRD08366.LOG (December 31, 2008)
- Contents:
  - Date/time of each new ATIS message
  - Text corresponding to contents of each ATIS message



# Example Log File: Broadcast

```
BRD08196.LOG - Notepad
File Edit Format View Help
VANDENBERG AFB, STAND BY FOR NEW ATIS MESSAGE.
*****
08.07.14 21:55:34
VANDENBERG TOWER INFORMATION FOXTROT,
291600Z 12002KT 10SM OVC015 21/15 A3010 RMK SLP196=
RWY 19L IN USE. EXPECT ILS APPROACH, RWY 19L.
ADVISE ON INITIAL CONTACT YOU HAVE INFORMATION FOXTROT.
*****
08.07.14 21:56:34
VANDENBERG TOWER INFORMATION GOLF,
291600Z 12002KT 10SM OVC015 21/15 A3010 RMK SLP196=
RWY 19L IN USE. EXPECT ILS OR GPS APPROACH, RWY 19L.
ADVISE ON INITIAL CONTACT YOU HAVE INFORMATION GOLF.
*****
```



# Network Log File

- Contents: CXI transmissions to XMU Voice Server
- Naming Convention: NETyyynnn.LOG  
where yy = year, nnn = day
- Example: NET08047.LOG (February 16, 2008)
- Contents:
  - Date/time of CXI transmission of each ATIS message from StarCaster ATIS computer to XMU Voice Server
  - Details about each CXI transmission
    - Success or Failure



# Example Network Log File

```
NET10162.LOG - Notepad
File Edit Format View Help
*****

10.06.11 13:15:20
OPEN 206.12.104.8 [OK]
put C:\Users\Public\Documents\StarCaster ATIS\BRDCAST\MSG.001 msg.001
!card1.1=xoff [OK]
!card1.1=xon [OK]
!card1.2=xoff [OK]
!card1.2=xon [OK]
!card1.3=xoff [OK]
!card1.3=xon [OK]
!card1.4=xoff [OK]
!card1.4=xon [OK]
quit [OK]

CXI Start Date/Time: 10.06.11 13:15:20
CXI End Date/Time: 10.06.11 13:15:20
IP Address of Destination: 206.12.104.8
Total Bytes Transmitted: 47,837
Duration of Transmission: 0.3 sec
Transmission Rate: 159 KBytes/sec
CXI Transmission: Successful
```



## METAR Log Files

- Contents: Weather data received from AFTN
- Naming Convention: METyyynnn.LOG  
where yy = year, nnn = day
- Example: MET08002.LOG (January 2, 2008)
- Contents:
  - Date/time of receipt of weather data (METAR) on AFTN serial data line
  - Text of weather data items



# METAR Example

```
MET07346.LOG - Notepad
File Edit Format View Help
*****
07.12.12 18:18:33
BIKF 121800Z 13027G38KT 9999 -RA FEW011 SCT023 BKN032 06/04
Q0999=

BIKF 121800Z 15027G38KT 9999 -RA FEW011 SCT023 BKN032 06/04
Q0999 A2950=

WEATHER AT 18 00 UTC, WIND 150 DEGREES 27 KNOTS, GUSTS 38
KNOTS, VISIBILITY 10 KILOMETRES OR MORE, LIGHT RAIN, CLOUD FEW
AT 1000 100 FEET, SCATTERED AT 2000 300 FEET, CEILING BROKEN AT
3000 200 FEET, TEMPERATURE 6~, DEW POINT 4~, QNH 09 99
HECTOPASCAL, 29 DECIMAL 50 INCHES#.

*****

07.12.12 18:38:35
BIKF 121830Z 13031G43KT 6000 RA BR FEW011 BKN025 BKN038 06/04
Q0999=
```





## Error Log Files

- Contents: Weather data containing format errors
- Naming Convention: ERRyynnn.LOG  
where yy = year, nnn = day
- Example: ERR08002.LOG (January 2, 2008)
- Contents:
  - Date/time of receipt of weather data items containing format errors
  - Text of weather data containing the error



# Error Log Example

```
ERR07341.LOG - Notepad
File Edit Format View Help
*****
07.12.07 18:19:36
BIKF 071820Z 18021KT 9999 -RA FEW015 BKN021 BKN032 06/05 Q004=

station id      BIKF
time            071820Z
Winds           18021KT
visibility      9999
weather        -RA
sky condition   FEW015 BKN021 BKN032
temperature    06/
dewpoint       05

Altimeter Error

*****

07.12.07 18:48:24
BIKF 071849Z 18021KT 9999 -RA FEW015 BKN021 BKN032 06/05 Q004=
```



## Change Password

- Password is required to perform Maintenance functions
- Original password is set at factory ("ATIS")
- Password can be changed by Maintenance Technician
- Procedure:
  - Click on **Change Password** button
  - Enter Current Password
  - Enter New Password (twice)
  - Click **OK** button
- Password format: 1-12 alphanumeric characters
  - Case insensitive (ABC = abc)





## Display System Information

- Allows Technician to obtain StarCaster System information
- Procedure:
  - Click on **About...** button
  - Displays system information dialog box
    - Product Release Version
    - Product Release Date



About StarCaster ATIS

**StarCaster ATIS**

Product Release Version:	ATIS-3.18	
Product Release Date:	22 November 2007	
Vocabulary Version:	V01.89/071120	
ATIS GUI Version:	1.0.0.110	
ATIS GUI Creation Date:	November 21, 2007	
StarCaster Kernel Version:	1.0.0.131	
StarCaster Kernel Creation Date:	November 5, 2007	
Copyright © 2003-2007	STR-SpeechTech Ltd.	



## Change XMU IP Address

- StarCaster ATIS computer communicates with XMU Voice Server via network connection
- XMU IP Address is set at factory
- Can be changed by Maintenance Technician
- Procedure:
  - Click on **XMU+ IP Address** button
  - Enter Password
  - Displays current XMU IP Address
  - Change and click **OK** button



## Exit the Program

- Technician can exit the StarCaster ATIS program
- Procedure:
  - Click on **Exit** button
  - Enter Password
- Program closes and returns to Windows Desktop
- ATIS Broadcast is terminated
- Program can be restarted using StarCaster icon



## Error Messages

- StarCaster ATIS System may display error messages:
  - AFTN Error - failure to receive weather data on AFTN data line
  - FTP Error - failure to send ATIS message to XMU voice server
    - List of FTP Completion Codes
    - *Installation and Configuration Manual, Appendix B*
- ATC actions: contact Technical Maintenance personnel
- Technician action:
  - Examine TEC log file
  - Diagnose and correct problem





# StarCaster ATIS - Error Messages



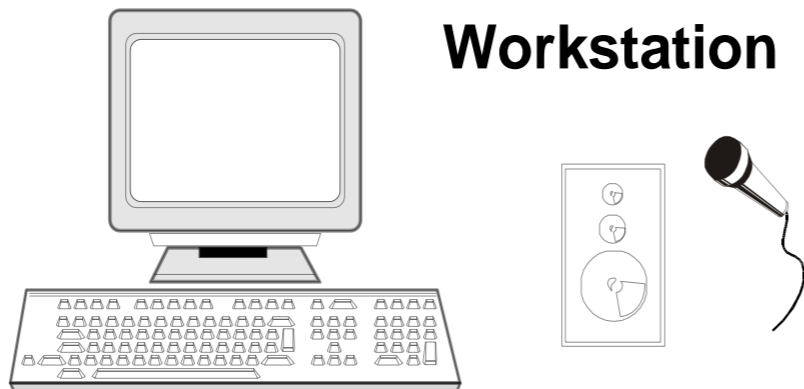


## Hardware Overview

- All StarCaster ATIS hardware components are Commercial Off-the-Shelf
  - Personal Computer
  - Video Monitor, Keyboard and Mouse
  - Microphone and Pre-amplifier
  - Powered Speakers
  - XMU Voice Server



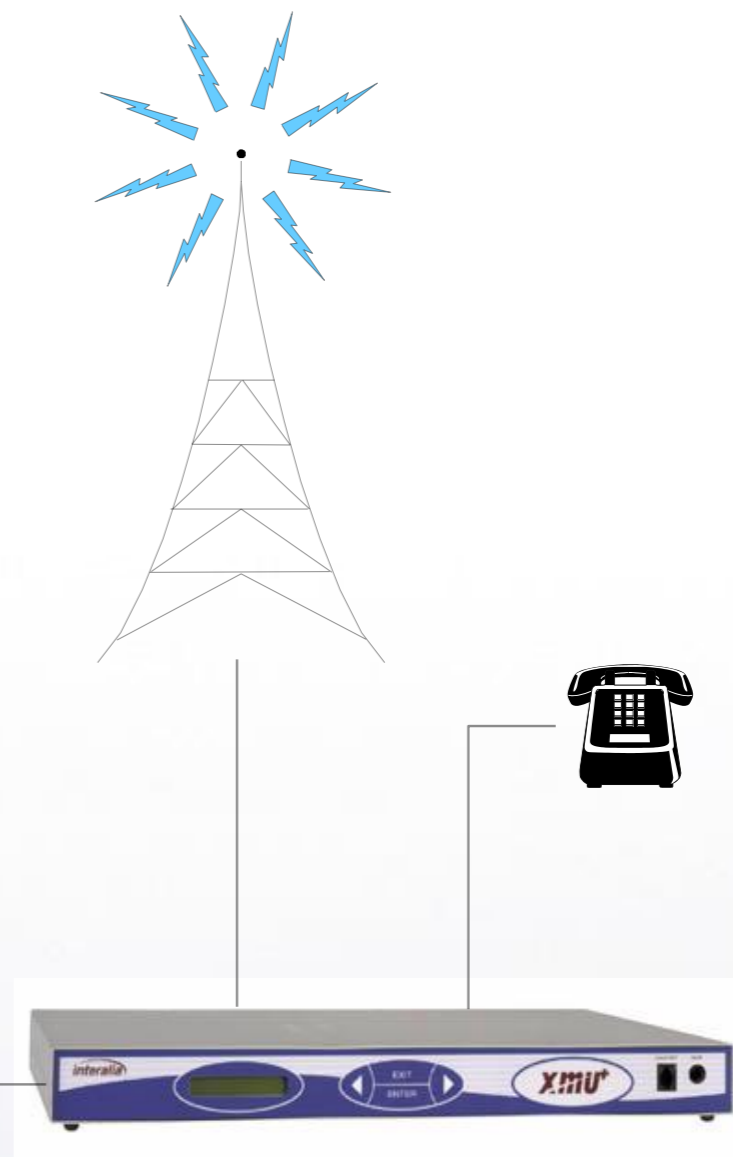
### StarCaster ATIS Workstation



### IDS5 Weather Data



### StarCaster Computer



### XMU Voice Server



## Hardware Connections

- Hardware Connections:
  - *Installation and Configuration Manual*, Section 2.2
- Test of System Connections:
  - *Installation and Configuration Manual*, Section 2.5
    - Verify Transfer of Audio Data to XMU
    - Verify Audio Output at Workstation
    - Verify Audio Recording
    - Verify Receipt of Weather Data from IDS5/serial



# **STARCASTER ATIS**

## **SOFTWARE CONFIGURATION**



## Software Configuration

- Factory Configuration:
  - *Installation and Configuration Manual, Section 3*
  - Describes software configuration of:
    - XMU Voice Server
    - PC Operating System
    - StarCaster ATIS Application Software



## Modify Factory Settings

- Most Factory Configuration settings do not need to change
- Only IP Addresses need to be modified
  - *Installation and Configuration Manual, Section 4*
  - Change IP Address on XMU Voice Server
  - Change IP Address on PC
  - Change IP Address used by StarCaster software to communicate with XMU Voice Server



# **STARCASTER ATIS**

## **ONGOING MAINTENANCE ACTIVITIES**





## Ongoing Maintenance Activities

- Performance Testing after Installation
  - *Installation and Configuration Manual, Section 2.5*
    - Verify Transfer of Audio Data to XMU
    - Verify Audio Output at Workstation
    - Verify Audio Recording
    - Verify Receipt of Weather Data from IDS5/serial
- Preventative Maintenance Procedures
  - Checking / cleaning hardware components / cabling
  - Schedule to be determined by customer



## Ongoing Maintenance Activities (cont'd)

- Hardware Replacement
  - All components may be spared
  - Defective component should be replaced with spare
- Installation of New Software Release
  - New StarCaster ATIS software release may be issued (as required)
  - Delivery medium - CD or DVD
  - Delivery will include detailed installation instructions
  - Technicians are responsible for software installation