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MACS Redundancy Module

The screenshot displays the MACS Redundancy Module interface. The main window, 'PREVIEW Video Switch', shows a control panel for an 'AUDIO VIDEO SWITCHER'. It includes a 'Communication' status indicator, several control buttons, and a 'PREVIEW' window showing a video feed of a 'TMN' and 'ROGERS 300' station. A 'Pulsed Point Actions' dialog box is open, showing 'Unit: MACS EXEC' and 'Point: SCRIPT'. A 'Sample Script.txt - WordPad' window is also open, displaying a script with various control commands and conditional logic.

```
# Define status and control points and other variables
DEFINE INT ANTENNA, SENTRY, ELECTRALERT, ANALOG, TEMPERATURE
DEFINE INT INSIDE, SENTRY, ELECTRALERT, ANALOG, AMBIENT
DEFINE BOOL DEICEING, SENTRY, ELECTRALERT, OUTPUTS, HEATER
DEFINE BOOL AIR CONDITIONER, XIO, OFFICE, OUTPUTS, COOLING
DEFINE COMM ALARM, SENTRY, TORONTO, , COMMUNICATION
DEFINE BOOL DONE, VIRTUAL, VIRTUAL, VIRTUAL, VIRTUAL
DEFINE BOOL WAVESWITCH, SENTRY, SWITCH, RELAYS, WAVEGUIDE

# Check external and internal temperature and turn deiceing and
# air conditioning on or off.

IF ANTENNA <= -5
  SET DEICEING
ELSE
  RESET DEICEING

  IF INSIDE > 30
    SET AIR CONDITIONER
  ELSE
    RESET AIR CONDITIONER
  ENDFIF
ENDIF

# Check communication status and run FTP script to switchover service.
# Switch wave guide from main to standby. Run loop up to 3 times.

EVENT Try switchover up to 3 times
LOOP 3
  TRACE loop pass
  GET COMM ALARM
  IF ACTIVE COMM ALARM
    EVENT FTP TO 200.0.0.3
    DELAY 5000
    FOREGROUND ftp /s ftpscript 200.0.0.3
    PULSE WAVESWITCH
    DONE = TRUE
    BREAK
  ENDFIF
ENDLOOP
RETURN TRUE
```

- Automatically operates the equipment, based on user definable alarm and status conditions
- Automatically executes computer programs when user defined conditions are met
- Automatically executes scripts written by the users
- Allows computer programs and scripts manual execution from the custom screens

Many applications require that the alarm and control system take certain actions automatically when specific events happen. For example, if the equipment room is overheated, air conditioning could automatically be turned on. If there is an intrusion, the security audible alarm could sound. Some actions might be a lot more complex. For example, should the main transmitter fail, the system could take a series of actions to tune the standby transmitter, switch the service to the standby transmitter, and switch the waveguide to connect the standby transmitter to the antenna.

MACS performs automatic actions using the *MACS Redundancy Module*, which allows you to:

- Define a list of alarm and status conditions, which will trigger the system to automatically send a list of commands to the equipment
- Define a list of alarm and status conditions, which will trigger the system to automatically run one or more computer programs, such as telnet, ftp and other scripts
- Define any number of *summary alarm points*, which are activated and deactivated when a list of status and alarm conditions is satisfied. These points can be included in the custom screens created using the *MACS Display Editor*
- Define any number of *output points*, which you can include in your custom screens, created using the *MACS Display Editor*. When you click on the push buttons on your custom screens, these points can send a list of commands to the equipment, run computer programs or execute your own scripts.

Many applications require very specific sequences of commands to be executed automatically. Traditionally, such sequences have required custom programming. *MACS Redundancy Module* allows you to “program” your system yourself, by writing your own scripts, using the *MACS Script Language*.

A script is a simple text file, which contains one or more lines of text. Each line of text represents one *statement*. MACS statements allow you to check for changes in the equipment status, to control and configure your equipment, and to execute other computer programs from your script. The script language also includes statements to control the flow of your script execution. For example, you can use *IF* conditions and loops. Finally, you can use output statements to send event reports to the MACS user interface programs, or to add debugging information to the MACS trace files.

MACS script language does not require any additional software development tools, such as compilers and linkers. All you need to create MACS scripts is a simple text editor, such as *Notepad*.

MACS Redundancy Module is available immediately from Micus Real Time Software Inc.