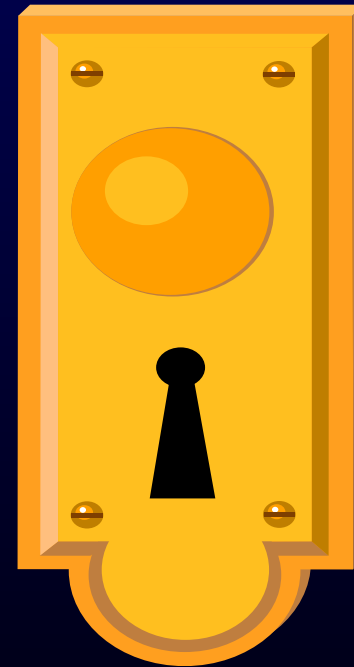


**MOTOROLA**



*A Building Block for Safety...*



# *The Challenge*



- *Provide Reliable Emergency Notification*
- *Enhance Employee / Community Safety*
- *Enhance Community Relations*
- *Enhance System Reliability and Performance*



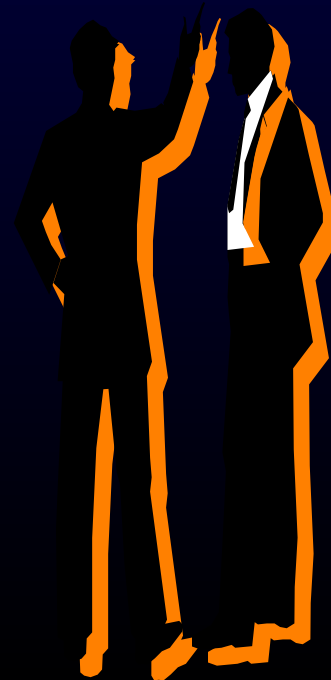
# *The Considerations*

- *The Emergency Action Plan*
- *System Cost*
- *Utilization of Existing Resources*
- *Technical Concerns*
- *Community Impact*



# *The Process*

- *Project Planning Meetings*
- *Key Personnel Contributions*
- *Acoustic Survey Implementation*
- *“Emergency Response Process Map”*
- *Conceptual System Design*
- *Technical Solution*



# ***What Makes a Siren System?***

- ***Acoustic Survey & Siren Selection***
- ***Radio Communication Coverage & Design***
- ***Control & Monitoring Customization***
- ***Installation & Maintenance***

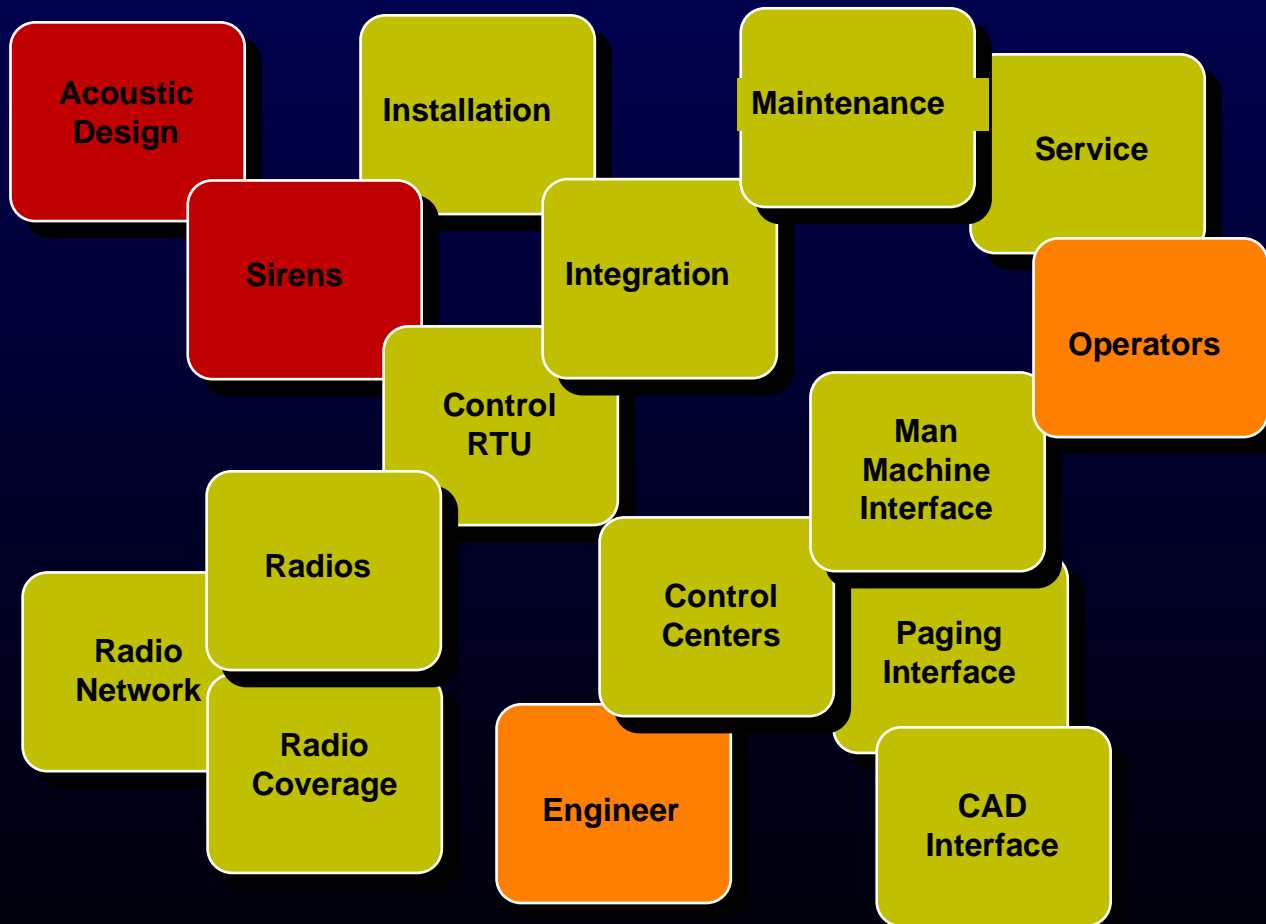


# ***Talk to the Right People!!***

**We Didn't Know that Motorola Provided  
Turn-Key Siren Control Systems !!!**

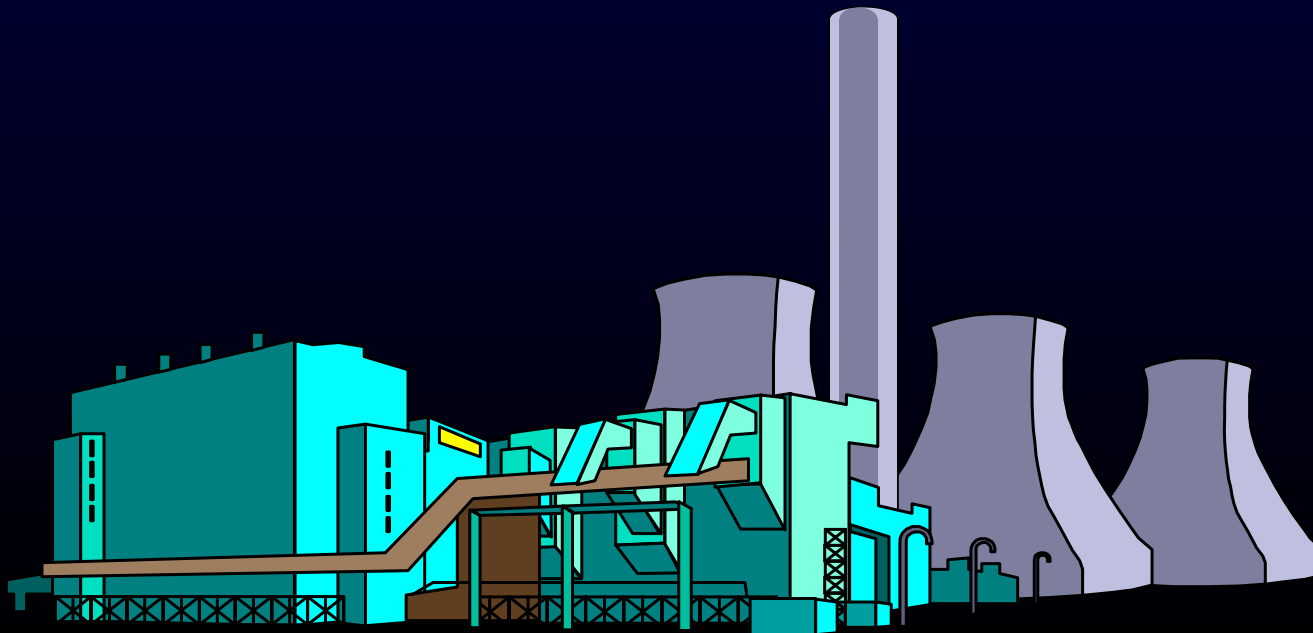


# *The Motorola Way*



# ***Does Motorola Have System Experience?***

- ***Nuclear Power Plant Applications***
- ***Industrial Applications***
- ***State & Local Government Applications***





# ***Motorola + Whelen or Federal***

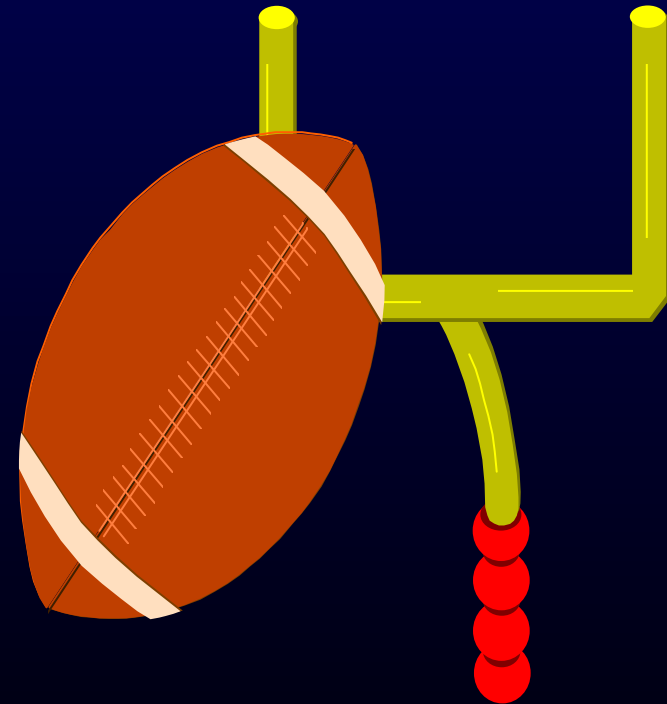
***“An Unbeatable Combination”***

- ***Field-proven integration of Motorola’s MOSCAD Control and Communications System and Whelen & Federal High Power Voice and Siren Products***



# ***What Does Motorola Bring to the Siren System?***

- ***Communication sub-system***
- ***Control sub-system***
- ***Integration with the sirens***
- ***Quality***
- ***Flexibility***
- ***Integration with other emergency communications systems***
- ***Support***
- ***Experience***
- ***Turn-Key Approach***



# ***Our Complete Solution***

- ***Acoustic design and siren products***
- ***Motorola's radio coverage and system design***
- ***Motorola's management of Turn Key Projects***
- ***Motorola's implementation of Windows PC Control Centers***
- ***Motorola's local support***

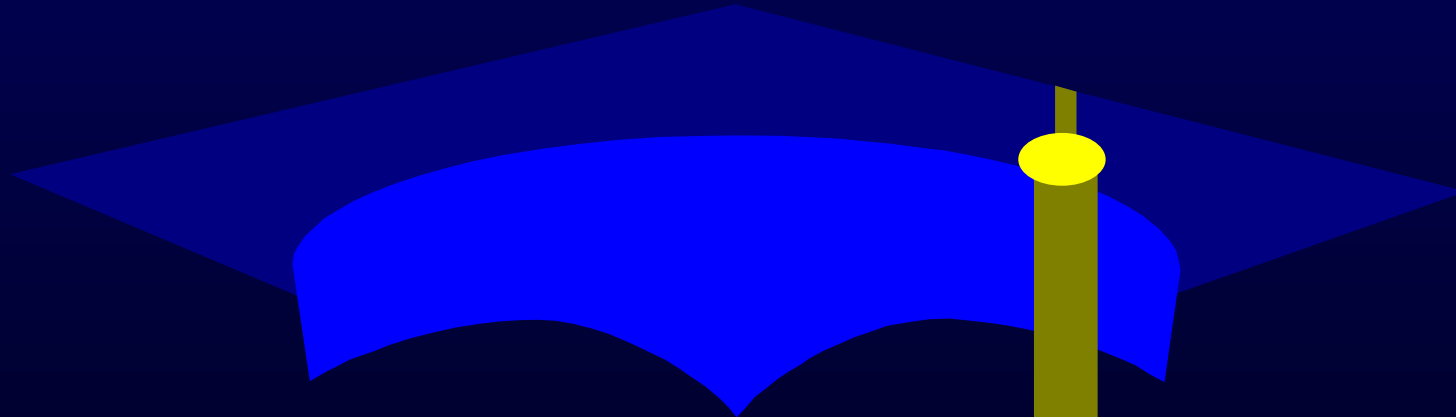


# ***Whelen & Federal : Siren Equipment***

- ***Acoustical considerations***
- ***Outdoor and indoor coverage***
- ***Supervised system***
- ***Omni-directional vs. Directional***
- ***Speakers and drivers***
- ***Audio amplification***
- ***Warning tone generation***
- ***Pre-recorded voice messages***
- ***Remote internal diagnostics***
- ***Battery-operated with AC or solar charger***



# WHAT IS "MOSCAD?"



- **MOTOROLA**
- **SUPERVISORY**
- **CONTROL**
- **AND**
- **DATA ACQUISITION**



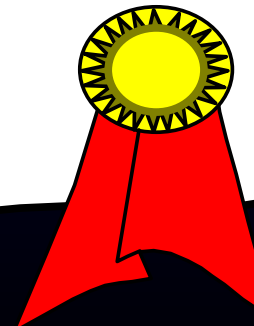
# ***What Does MOSCAD Bring to the System?***

**COMMUNICATION**

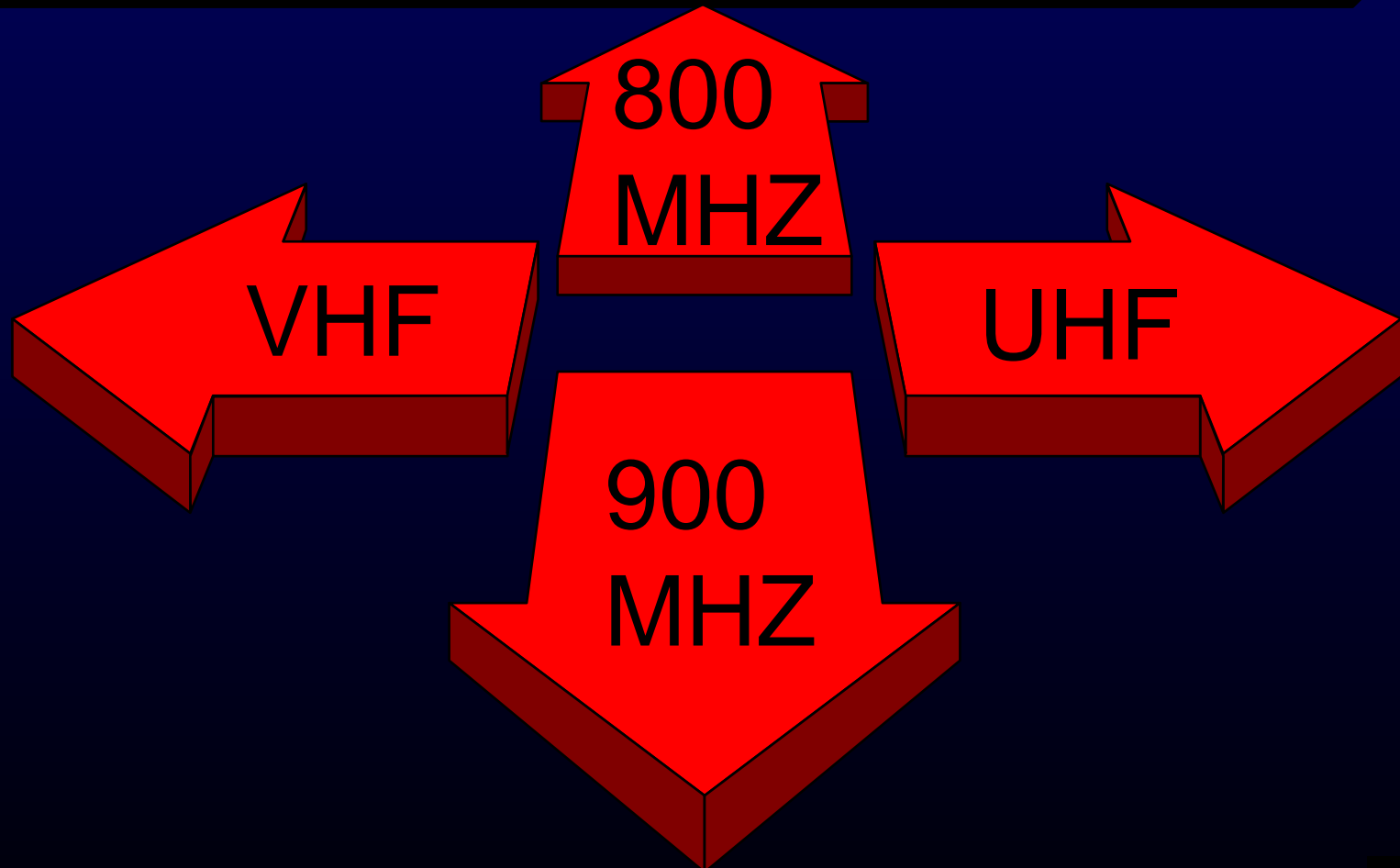
*and*

**CONTROL**

**SUB-SYSTEMS**



# *What Radio Coverage Options are Available?*



CONVENTIONAL OR TRUNKED



# Communications Cross-Roads

- **Conventional**
  - **VHF, UHF, 800 MHz, 900 MHz**
  - **MaxTrac, Jedi (MT2000)**
- **Trunking**
  - **800 MHz, 900 MHz, 821 MHz (Public Safety)**
  - **Analog (MaxTrac, Spectra)**
  - **Digital (ASTRO - APCO 25)**
- **Wireline**
- **Fiber-optic**
- **Combinations thereof...**





# **MOSCAD = COMMUNICATION**

- **Reliable signaling protocol for RF - MDLC**

- ✓ **Powerful Error Detection**
- ✓ **Polling & Contention**

- **Data packet transmission**

- ✓ **Complex Control Sequences**
- ✓ **Over-the-Air Remote Diagnostics & Programming**
- ✓ **Authentication - Protection from Unauthorized Activation**



# **MOSCAD = COMMUNICATION**

- ***RTU / Radio***
- ***Works on any communication infrastructure***
- ***Radio Interface - FSK, DFM, DPSK***
- ***Communication Ports***
  - ✓ ***RS232, RS485, Radio, Modem, Line***
- ***Data Speed - 1200 TO 9600 BPS***
  - ✓ ***Channel Dependent***



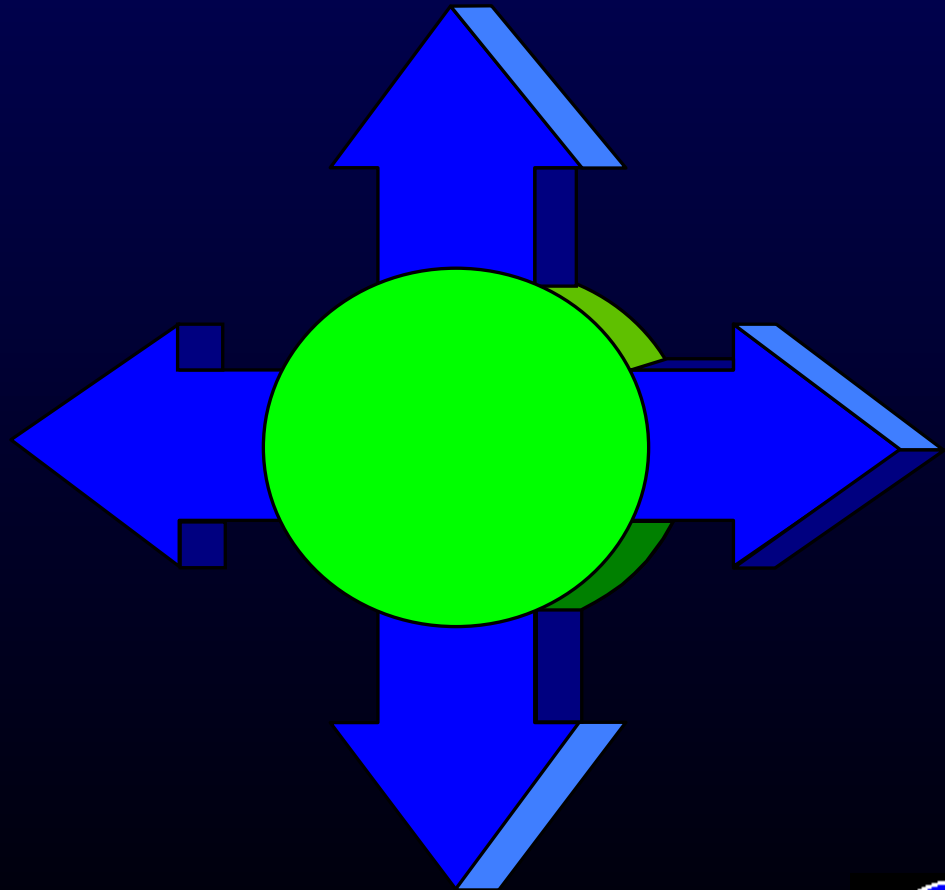
# **MOSCAD = INTEGRATION**

- **Reliability - Siren/MOSCAD integration pre-tested and field-proven**
- **RS232 interface**
- **Local intelligence**
- **Analog measurement and calculations**
- **Interface to weather stations**
- **Emulates siren controller RS-232 protocol**
- **Shared housing and power source**



# MOSCAD = FLEXIBILITY

- *Programmability*
- *Modularity*



# **MOSCAD = QUALITY**

- *6 Sigma Quality*
- *ISO 9001 & 9002*
- *I/O Protection*
- *Environmental Conditions*
- *Mechanical Assembly*

**1ST  
MALCOLM  
BALDRIDGE  
QUALITY  
AWARD**

**TOP 10  
“MOST ADMIRERD”  
CORPORATIONS  
Fortune Magazine**



# **MOSCAD = SUPPORT**

- ***Remote Diagnostics - Problems?  
Resolve remotely over-the-air, via  
dial-up modem***
- ***Remote Programming - Changes?  
Save time and \$ with over-the-air,  
via dial-up modem***
- ***Local Diagnostics - On-module  
LED's***
- ***Programming Tool Box - For local  
and remote diagnostic and  
programming***
- ***Local support and service of entire  
system***



# **MOSCAD = INTEGRATION**

- ***Automatic paging using alphanumeric display pagers and display panels***
- ***Interface to existing radio voice channels for Public Address***
- ***Interface to existing indoor PA system***
- ***Bridge to neighbor siren system - Collaboration***



# **MOSCAD = CONTROL**

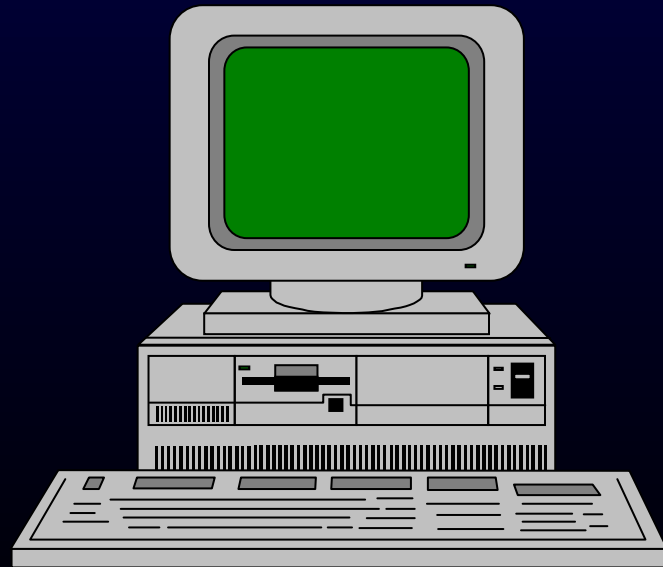
- ***Windows Software***
- ***Control Center - Fully customized and easy to use under stress***
- ***Custom HELP screens***
- ***Training mode***
- ***System Statistics & Information***





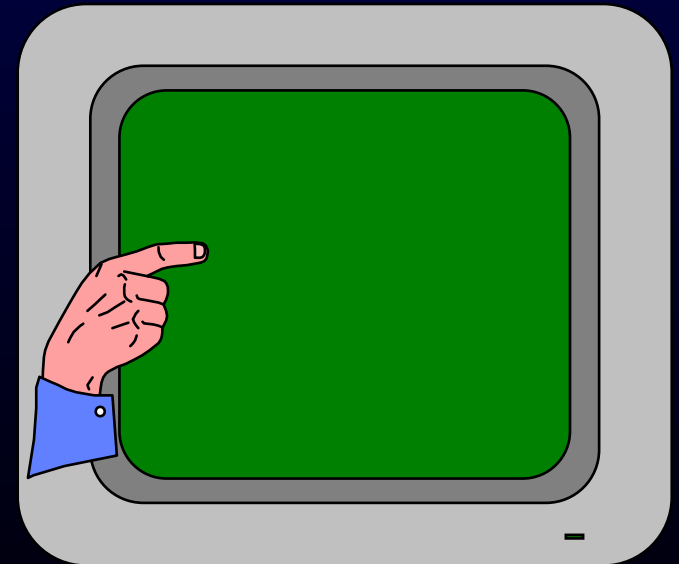
# ***MOSCAD-based Control Centers***

- ***Touch Screen Console***
- ***Windows based PC***
- ***Transportable Console***



# With “Touch Screen” as Operator Interface

- *Medium Size Systems*
- *Hardware Easy to use under stress*
- *On-screen HELP*
- *TRAINING mode*
- *Programmable*
- *Customized*



# *With "PC" as Operator Interface*

- *Large System Applications*
- *Wonderware's InTouch for Windows*
- *Full graphic capabilities*
- *Use mouse to select/control*
- *Extensive HELP*
- *Animated training tutorials*

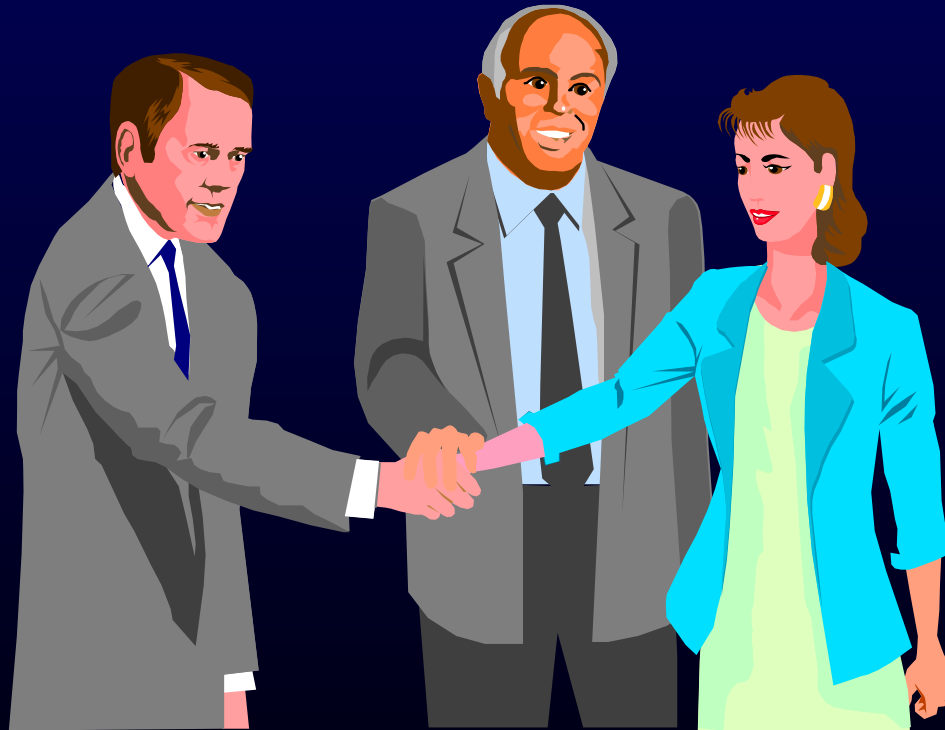


# *Transportable Console as Operator Interface*

- *Serves as a back-up*
- *Minimum control capabilities*
- *Suitcase “Jump & Run” System*
- *Latest generation uses 5” touch screen*



*Partner with Motorola and be...*



*Partners in QUALITY*



# Questions?

