Operational Effectiveness is Achieved via Planning, System Engineering and Technology Selection

• **Requirements Driven Technology Assessment** Avoids Selecting the Wrong Components
  • Threat Analysis
  • Security Force Reaction Times
  • Environmental Considerations

• **Detailed Engineering and Sensor Fusion Maximizes Coverage and Minimizes False Alarms**
  • Probability of Detection
  • False Alarm Rate
  • Vulnerability to Defeat

• **Human Interface Critical to User Performance & Effectiveness**
  • Display Design
  • Alarm Management
  • Automation
Securing Large Perimeters is Facilitated by Integrating Multiple Technologies, Sensors and Physical Security Layers

Digital Imaging Technology -> Radar Systems
IR Camera Systems <-> CCTV Systems
Sensor Fusion / Content Analysis

Alarm Management
User Interface
Common Operational Picture / Situational Awareness

Intrusion Detection Components
Physical Security Devices
Physical & Electronic Perimeter Intrusion Infrastructure
Perimeter Intrusion Detection System Components

• **Sensors**
  – Open Areas
    • Video (Optical, IR)
    • Volumetric (Radar, Microwave, Acoustic, IR)
  – Boundaries
    • Fences (Vibration, Fiber Optics, Strain, E-Field, Capacitance)
    • Underground (Pressure Line, Coax, Fiber Optic)

• **Communications Systems**
  – Fiber
  – Coax
  – Wireless

• **Alarm Processor**
  – Event Correlation
  – Image Processing / Content Analysis
  – Target Tracking

• **User Interface**
  – Audible, Visual (graphical, tabular)
  – Alarm Geo Coding
  – Situational Awareness Displays
## User Interface – Tabular / Graphical Hybrid

<table>
<thead>
<tr>
<th>Time</th>
<th>Identification</th>
<th>Description</th>
<th>Type</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:24:39D 05/13/02</td>
<td>ZONE_6TA</td>
<td>TAMPER MW ZONE 6--SOUTH GATE</td>
<td>TAMPER</td>
<td>NORMAL</td>
</tr>
<tr>
<td>15:24:20D 05/13/02</td>
<td>CC404MC</td>
<td>INTRUSION ALARM CC404--638° CC N</td>
<td>INTRUSION</td>
<td>NORMAL</td>
</tr>
<tr>
<td>15:23:30D 05/13/02</td>
<td>TEST</td>
<td>TEST COMMUNICATIONS CHANNEL</td>
<td>TROUBLE</td>
<td>NORMAL</td>
</tr>
<tr>
<td>15:23:30D 05/13/02</td>
<td>ACP-616</td>
<td>CONTROL PANEL</td>
<td>TROUBLE</td>
<td>NORMAL</td>
</tr>
<tr>
<td>15:23:20D 05/13/02</td>
<td>ZONE_6INT</td>
<td>ALARM MW ZONE 6--SOUTH GATE</td>
<td>INTRUSION</td>
<td>NORMAL</td>
</tr>
</tbody>
</table>

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**Alarm Acknowledgement**

Total Rows: 5
Unacknowledged Alarms: 1

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**Guidance Area**

**ARINC**
YOU WON'T BELIEVE WHAT WE CAN DO®