

# "How to Spec Your Project to Succeed: Best Practices from a Pro"

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# Bad Specifications



# Bad Specifications

- **Vague**
- **Lacking Standards**
- **Impossible Schedule**
- **Draconian Terms**
- **Strange/Unique Format**



**Bad specification**



**Good specification**



# FUDGE FACTOR

- **Fear**
- **Uncertainty**
- **Doubt**
- **Get**
- **Even**



# Successful Specifications

- **Clearly Understood by All**
  - **Cites Relevant Standards**
  - **Sound PM Fundamentals**
  - **Foundation For Changes**
- 
- ✓ **Contract Administration**
  - ✓ **Closeout Procedure & Process**



# MasterFormat™ (2004 Draft)

Division 00 – Procurement & Contracting

Division 01 – General Requirements

Divisions 02-19 – Facility Construction

Divisions 20-29 – Facility Services

Divisions 30-39 – Site & Infrastructure

Divisions 40-49 – Process Equipment



- 1) Procurement & Contracting Requirements
- 2) General Technical Requirements
- 3) Specific AV Project Requirements
- 4) Software & Network Integration



# Procurement & Contracting

- Advertising
- List of Documents & Drawings
- Rules of Procurement:
  - ✓ Qualifications
  - ✓ Bid Forms
  - ✓ Where & When
  - ✓ Bonding & Insurance



# Procurement & Contracting

- **Consideration**
- **Contract Language:**
  - ✓ **Inclusive**
  - ✓ **Precedence**
  - ✓ **Payment**
  - ✓ **Project Management**
  - ✓ **Changes**



# Procurement & Contracting

- **Sanctions:**
  - ✓ **Financial Penalties/Fines**
  - ✓ **Delay of Payment**
  - ✓ **Additional Warranty**
  - ✓ **Compensation for Professional Services**
  - ✓ **Forfeit of Performance Bond**



# MasterFormat™ (2004 Draft)

Division 26 – Electrical (was 16)

Division 27 – Communications (was 17\*)

275000 – General AV Requirements

275001 – 275999 – Specific AV Systems



# General Technology Reqs.

- **What other systems/disciplines are involved?**
  - ✓ **Voice**
  - ✓ **Data**
  - ✓ **Cabling**
  - ✓ **Electrical**
  - ✓ **Security**



# General Technology Reqs.

- **Who is going to do the work**
  - ✓ **1 Contractor doing all**
  - ✓ **Owner to do some**
  - ✓ **1 Contractor with Subs**
  - ✓ **Multiple Contractors, Owner as GC**



# General Technology Reqs.

- **What are key standards that need to be included?**
  - ✓ **CAT-5/6 UTP Testing**
  - ✓ **Fiber Optic Termination & Testing**
  - ✓ **Cable Management & Labeling**
  - ✓ **Wireless Frequency Assignments**
  - ✓ **Sound System EQ etc.**



# General Technology Reqs.

*Generally, these items do not greatly affect the bid price – only the results.*



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# Specific A/V Requirements

*The shorter and more concise  
these sections are,  
the more likely they will be read & followed.*



# Specific A/V Requirements

- **Equipment – Stock & Custom**
- **Cable & Connectors**
- **Termination Methods & Soldering**
- **Coordination of Work**
- **Room-specific finish detail**



# Specific A/V Requirements

- **Physical Security of Components**
  - ✓ **Rack Hardware**
  - ✓ **Cable Locks**
  - ✓ **Audio Alarms**
  - ✓ **IP Connectivity**
  - ✓ **Contact Closure/Alarm Panel**
  - ✓ **Surveillance/Recording**



# Software & Network Integration

*Not Just Integrated Control Systems  
(AMX & Crestron)  
Anymore*



# Software & Network Integration

- Who will configure IP Devices?
- Who will assign IP Addresses?
- Who is responsible for coordinating IP integration & communication?



# Software & Network Integration

- Who owns source code, interface screens, and configuration files?
- How are the electronic files to be delivered?
- Does Owner have right to modify during warranty period without voiding warranty?



# Software & Network Integration

- What access will Contractor have to network, both during and after project for support & troubleshooting?
- Dial-up modem connection?
- Configuration of QoS on switches for videoconferencing, voice
- Verification of QoS of network



# Integrated Control Systems

- Overall functional description
- Structure of pages, functions
- Equipment functions, device by device.
- Look of pages (logos, colors, Owner review)
- Lock-out/Passcode requirements



# Integrated Control Systems

- Remote Management

**\*\* Check your data outlet counts \*\***



# MasterFormat™

- **Division (27)**
- **Section (275000-275999)**
  
- **Part (1,2,3)**
- **Article (1.0x, 2.0x, 3.0x)**
- **Paragraph (3 sentences)**
- **Subparagraph**



# Expensive GOTCHAS

- **Cable Demolition & Disposal**
- **Above-ceiling wire management**
- **Plenum cabling**
- **Size of Conduit & Size of Boxes**
- **Boxes (esp. floor) in right location**
- **Furniture & Mounts:**

**ADA**



# Questions



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