



# DEI

# Digital Engineering Initiative

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CCAC Assoc. For Engr.



# SELF EXAMINATION

## General Observations

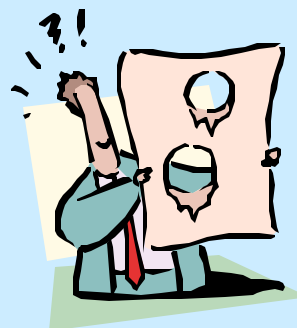
- **One deep in many skills**
- **Full systems design skills limited**
- **Workforce aging and retiring**
- **10 gap in hiring**
- **Workload is not decreasing in some areas it is increasing**
- **New technologies are not being as actively pursued as they should be.**



# Self Examination

## CORPORATE KNOWLEDGE

### Current Data Storage



### **NEXT GENERATION**

Mentoring & OJT



# Goal Of DEI

- **Improve Engineering Processes in LAD**
- **Decrease development cost and time**
- **Provide increased automation support to the process**
- **Enhance simulation capabilities**
- **Automate test data capture**
- **Provide better management oversight of process**



Modeling

Weapons

Cannon Ammo

SA Ammo

Historical Library

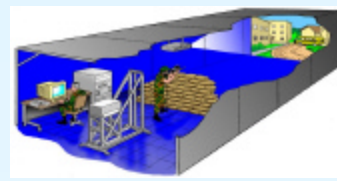


Engineering Data

IDE Link

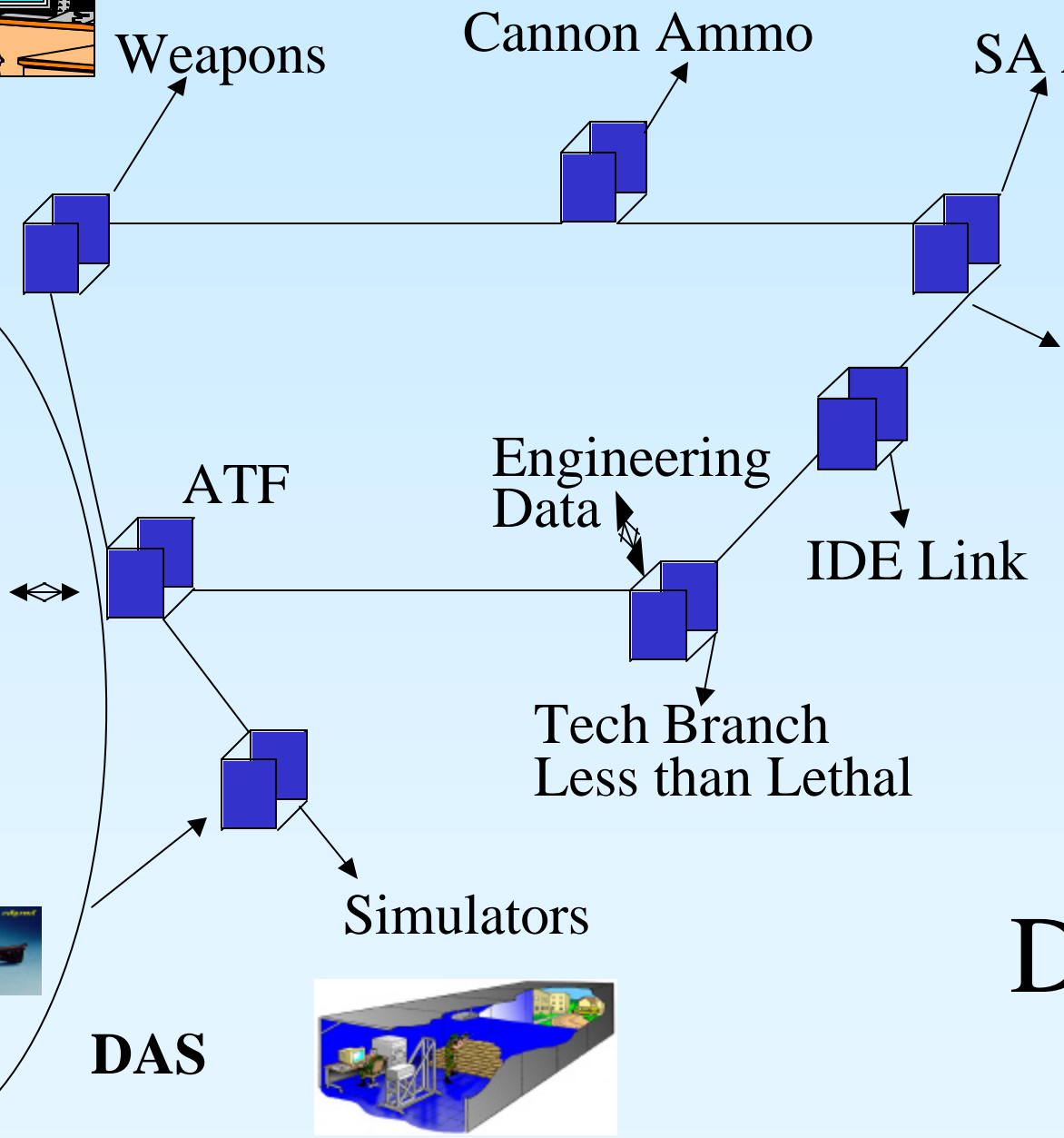
Tech Branch  
Less than Lethal

Simulators



DAS

DEI



# How we propose to do it

- Pilot in the light Armaments Division of CCAC covering small and medium caliber ammunition.
- Spread across other calibers in sequence customizing for each commodity as necessary
- Incorporate this with other systems at ARDEC to include TIME and IDE. Where practical utilize available systems.
- Expand use to PEO's / PM's as a minimum.
- OGA and Contractors ?



# Pilot Program (LAD)

- Process Baseline and Improvements
- Repository Backbone (Ammo/Weapons model) )
- Engineering Capacity Enhancement
- Simulation Capacity Enhancement
- Test Capability Enhancement (DAS)
- Management Capability Enhancement



# Progress To date

- Overall Program Plan & Schedule completed. 3yrs, \$13million
  - (\$1million in LAD overhead spent to date)
  - Partial funding commitment from one customer
- Benchmarking completed
- Data Acquisition System Started



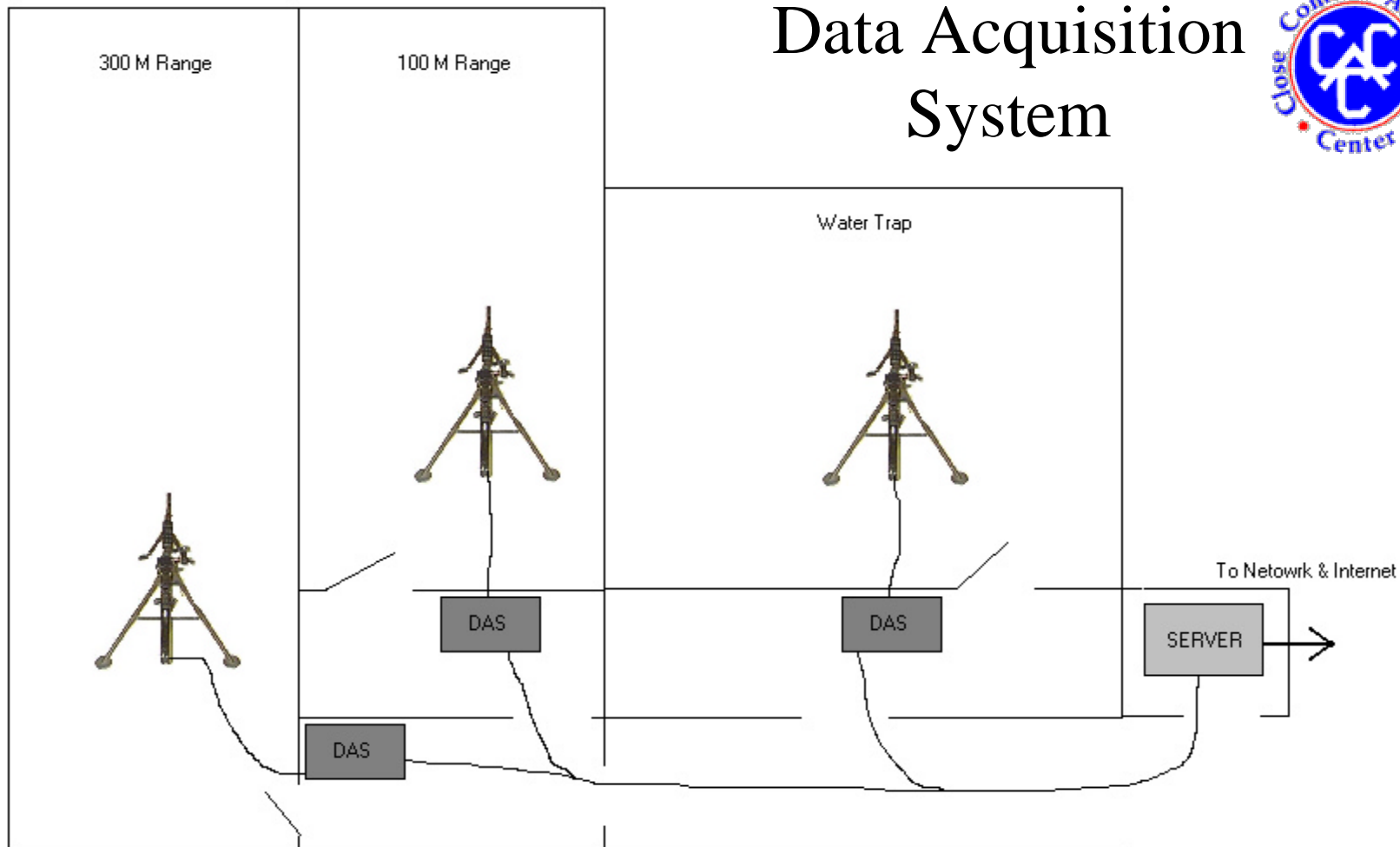


# Benchmarking Results

- COTS Solutions
- Integrated Solutions
- Defined Process
- Management Support
- Acceptance Age Related
- Life Cycle (CAD/CAM)
- CAD fidelity critical
- Experienced 50-75% savings in cost and schedule.
- Funding Shift
  - More \$ in engineering upfront
  - Less \$ spent in testing, production troubleshooting and engineering change orders.
  - Less \$ spent in evaluation of alternatives
- Enhancement of Corporate knowledge



# Data Acquisition System



32 Sensors:

Pressure Sensors

Accelerometers

Strain Gauges

Temperature

Velocity

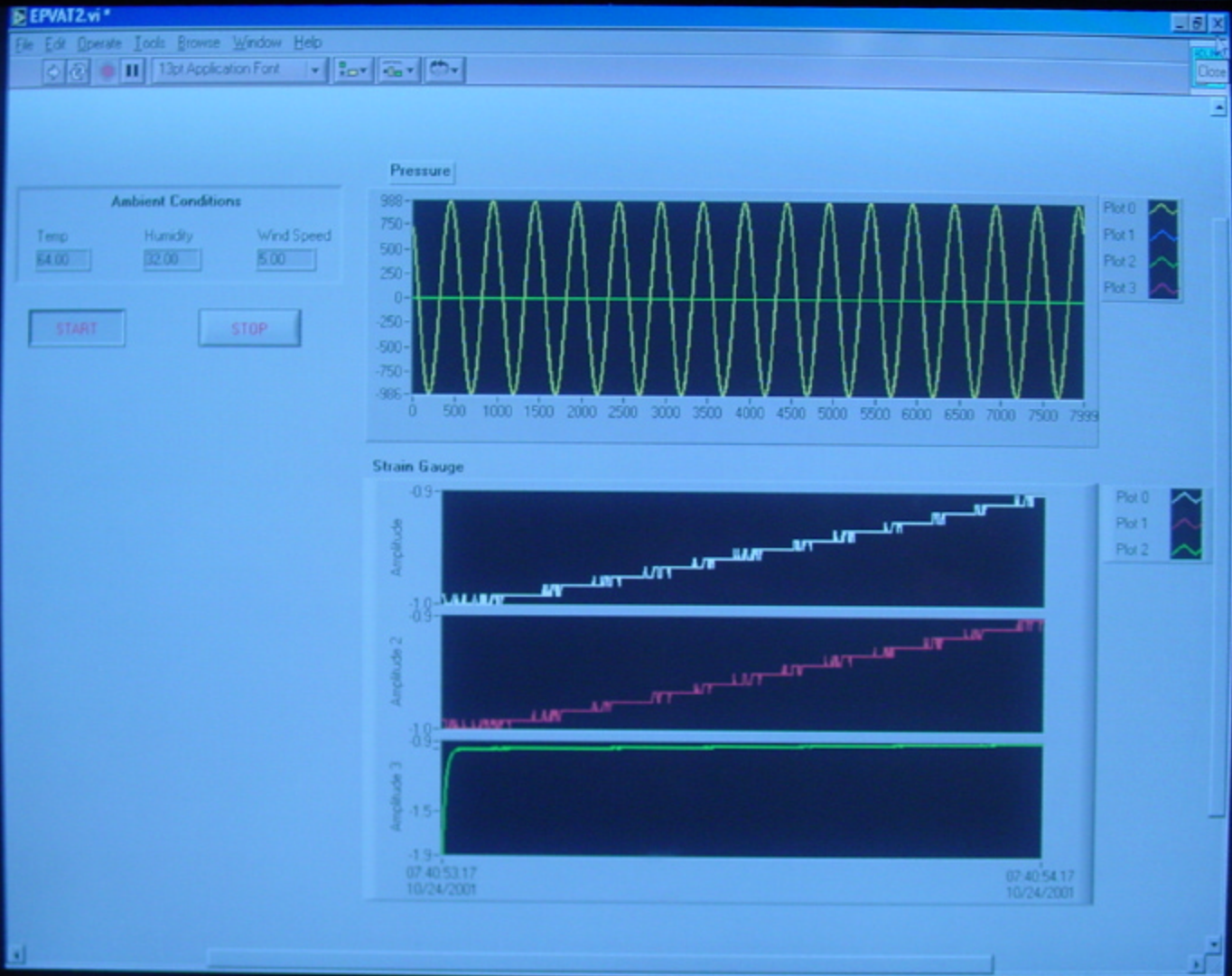
Humidity

Wind Speed

Light

Sound







# DAS Status

- Systems purchased for all ranges.
- EPVAT testing is now functional on DAS
- Algorithms being developed to refine data in real time and assemble in a final report



# Information

- If you are interested in this program
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