Objective of this Workshop

Understand motivation and features of different forms of written communication in the workplace.
Overview

- **Forms of written communication:**
  - Executive summary
  - Technical report / Detailed design document
  - Proposal / White paper
  - E-mail

- **For each form of communication:**
  - Motivation and use
  - Preparation
  - Execution
  - Examples / Lessons learned
Written Communication

- **Format and Structure:**
  - Document
    - Introduction, body, conclusion
  - Presentation

- **Audience**
  - Manager
  - Coworker
  - Customer

- **Message**
  - New information
  - Expected report
  - Formal documentation
Executive Summary

Concisely communicate ideas to management.

- Preparation – Identify the message
- Execution – Make the messages easy to find
Executive Summary - Preparation

Identify the message

- Most important conclusion
- Problem examined
- Condense larger work
- Why should we read on?
Executive Summary - Execution

Make the messages easy to find

- Start with the answer
- Concise version of larger report
  - Conclusion
  - Problem
  - Scope
Executive Summary – Examples

- We demonstrated the ability to reduce prime power requirements by 10 kW for the production system.

- The customer review evaluated our program deficient in six areas.

- A requirements change caused a part with a six month lead time to be reordered.
Executive Summary – Examples (Fixed)

- We demonstrated the ability to reduce prime power requirements by 10 kW (10%) for the production system. This enables use of the Type A generator that saves 50% on overall costs.

- The customer review evaluated our program acceptable in 94 of 100 areas and we were paid the performance bonus.

- A requirements change caused a part with a six month lead time to be reordered, but will not delay initial system test.

Record technical concepts and details for coworkers or clients

- Preparation – Identify scope
- Execution – Logical development
Technical Report - Preparation

Identify scope

- What are the items this report will cover?
- What level of detail is necessary?
- Who will consume the information?
Logical Development

- Abstract – Specific and concrete
- Introduction – Why write?
- Isolate technical concepts
- Analyze and interpret data – don’t just report!
- Effective use of diagrams
- Summarize and propose future work
Technical Report – Examples

- Signal enhancement can be performed a couple of different ways.

- The data from the receiver is collected in the Input Buffer where it is processed and flags are set for later processing.

- The purpose of this report is to summarize the modifications made to the existing simulation that accurately capture the influence of environmental factors.
- Signal enhancement is performed with either fixed weight interpolation, or with a spectral estimate and inverse FFT process.

- The data from the receiver is collected in the Input Buffer where it is passed through the large amplitude detection process (see diagram below).

- The purpose of this report is to detail the modifications made to the existing Hardware Life Cycle (HLC) simulation. The changes accurately account for influence of humidity on the HLC.
Proposal / White Paper

Communicate ideas to potential customers

- Preparation – Identify area of opportunity
- Execution – Demonstrate efficacy of concept or product
Identify area of opportunity

- What is the need for the customer?
- What do we have to offer?
- How is our offer unique?
- What funding is available?
Demonstrate efficacy of concept or product

- Executive summary
- Technical details
- Feature-Benefit-Proof
- Answer the mail
- Positive language
The QZP-16 has a special mode, but cannot promise 100% detections in stressing environments.

The MAGIC Team combines experience to create a fully compliant system.

Our mature product line allows us to meet the desired schedule.
The QZP-16 has a **two times further extended coverage** mode and detects 97% of targets in a stressing environment that includes windblown rain.

The MAGIC Team **leverages** experience from developing hardware and software on Widget A to create Widget B that exceeds the requirements of the USAF.

Our mature product line that **produces 600 units per week** allows us to meet the schedule asking for delivery of 500 units per week.
E-mail

Share information with coworkers and clients

- Preparation – Identify need
- Execution – Use proper etiquette
E-mail - Preparation

Identify the need

- Why do I need to send this message?
- Who do I need to include?
- What is the action required?
- What is the time sensitivity?
- Do I mind if this is forwarded?
Use Proper Etiquette

- Only send to necessary people
- Concise, descriptive, appropriate subject
- Use proper grammar and spelling
- New York Times rule
- Attachments are often unnecessary
E-mail – Examples

- U goin 2 the mtg?
- WHAT ARE WE GOING TO DO TO FIX THE PROBLEM?
- Did you see what they were wearing today?
- The customer doesn’t have engineers capable of designing a cube.
Written Communication Tips

- Defined need
- Focused topic
  - Clear and concise language
    - Factual information
    - Professional language
    - Results oriented
    - Explanatory
  - Intended audience
  - Appropriate build-up
  - Proofread and revise
Final Thought

Each piece of written material you produce leaves a record of your ideas, performance, and capabilities.
Questions?