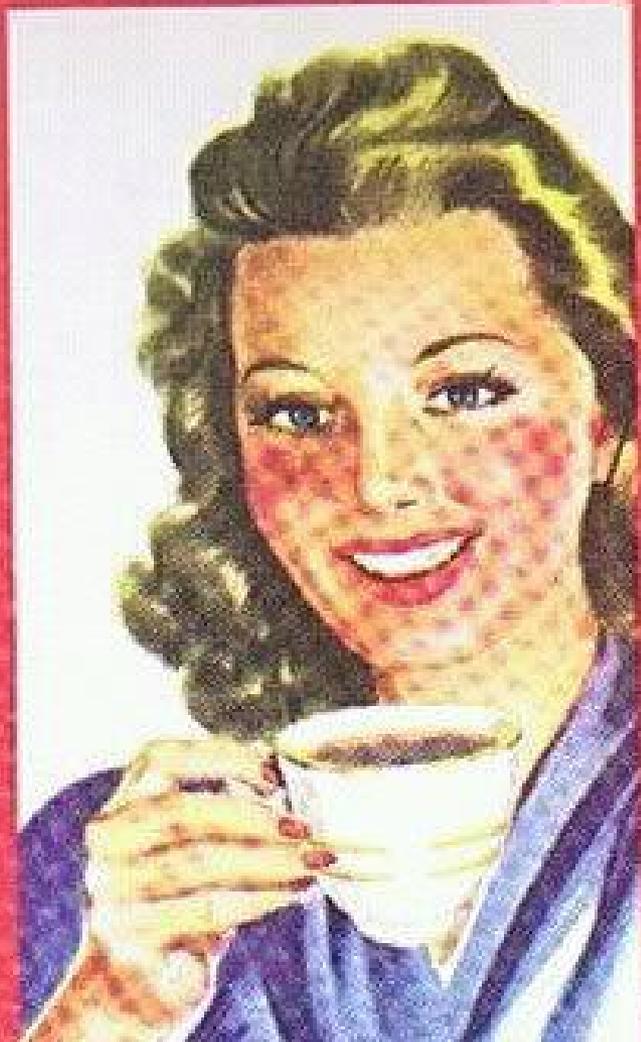# Industry Executive Panel

*How can systems engineering help improve program development and execution in times of tight budgets*

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**17th Annual
Systems Engineering Conference**

*Sponsored by*
**NDIA Systems Engineering Division**

*In Conjunction With*
**Deputy Assistant Secretary of Defense, Systems Engineering**

I'll have a Café-Mocha-Vodka-Valium-Latte to go, please.

# Systems Engineering

**Systems Engineering is not a silver bullet!**

**It is not the definitive answer to guaranteeing program success**

**Many other factors affect program performance, such as:**
- **Inadequate funding, especially program start**
- **Inadequate schedule**
- **Inadequate staffing**
- **20-lbs of requirements in a 5-lb package**
- **(or $1Bn of requirements in a $550M bomber)**

**BUT systems engineering is an integrating discipline that CAN help assure program success**

# Keep in mind---

**Systems Engineering is not a formula-driven engineering discipline**

**It is as much of a philosophy of engineering design as anything**
> **"big picture" engineering**
> **"critical thinking"**

**Tools are important to the systems engineer**

**New tools are headed our way**
> **i.e. model-based engineering**
> **(e.g. the "CREATE" tool suite of physics-based models from HPCMP)**

# Systems Engineering

**BUT without <u>competent</u> and <u>effective</u> systems engineering, especially at the start of a program, including during _<u>development planning</u>_, the chances of program failure are very high.**

**Front-end systems engineering is absolutely essential to make sure we:**

> **Rationalize requirements**
> **Understand the intended use and environment**
> **Make sure the requirements lead us to a practical and feasible system**

**Build the RIGHT thing, and Build the thing RIGHT!**

# Truisms

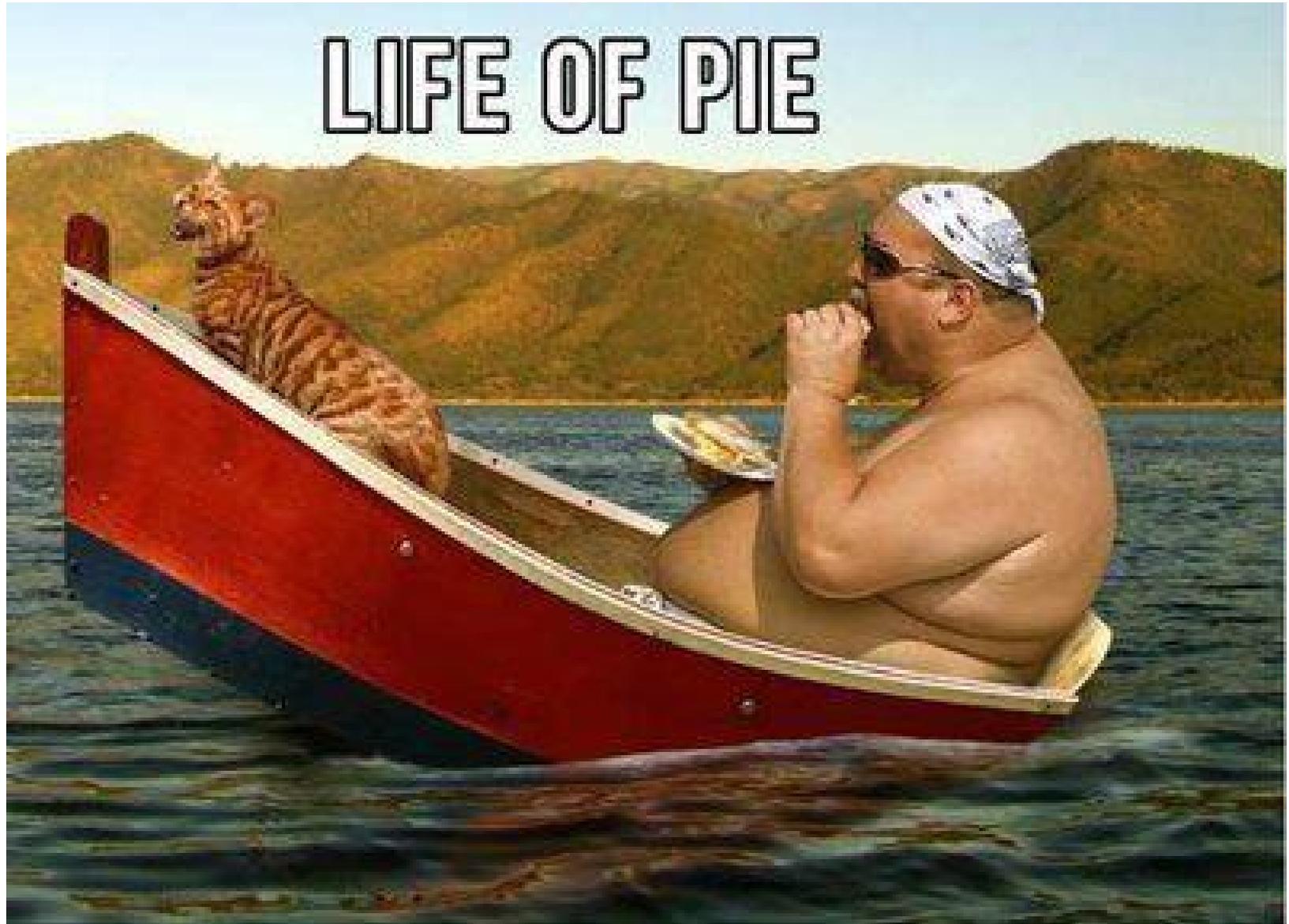There is no greater need among mankind than to edit the written word of another

# Truisms

There is no greater ~~need~~ urgency among ~~program managers~~ ~~software engineers~~ software developers than ~~to start~~ ~~initialize~~ begin ~~coding~~ writing code ~~on Day 1~~ ~~at program start~~ as soon as the contract is awarded

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# The Panel

- **Mr. Pat Seamon, Harris Corp, Vice-President, Engineering & Operations**
- **Dr. John Zolper, Raytheon Company, Vice-President, Research and Innovation**
- Mr. Mark C. Anderson, Boeing Company, Director, National Security Programs
- **Mr. Keoki Jackson, Lockheed Martin, Corporate Vice-President for Program Excellence**
- **Mr. Frank Serna, CS Draper Laboratories, Director, Systems Engineering**

- *Moderator: Bob Rassa, Director, Engineering Programs, Raytheon Space & Airborne Systems, and Chair Emeritus, NDIA Systems Engineering Division*