There Is No Box

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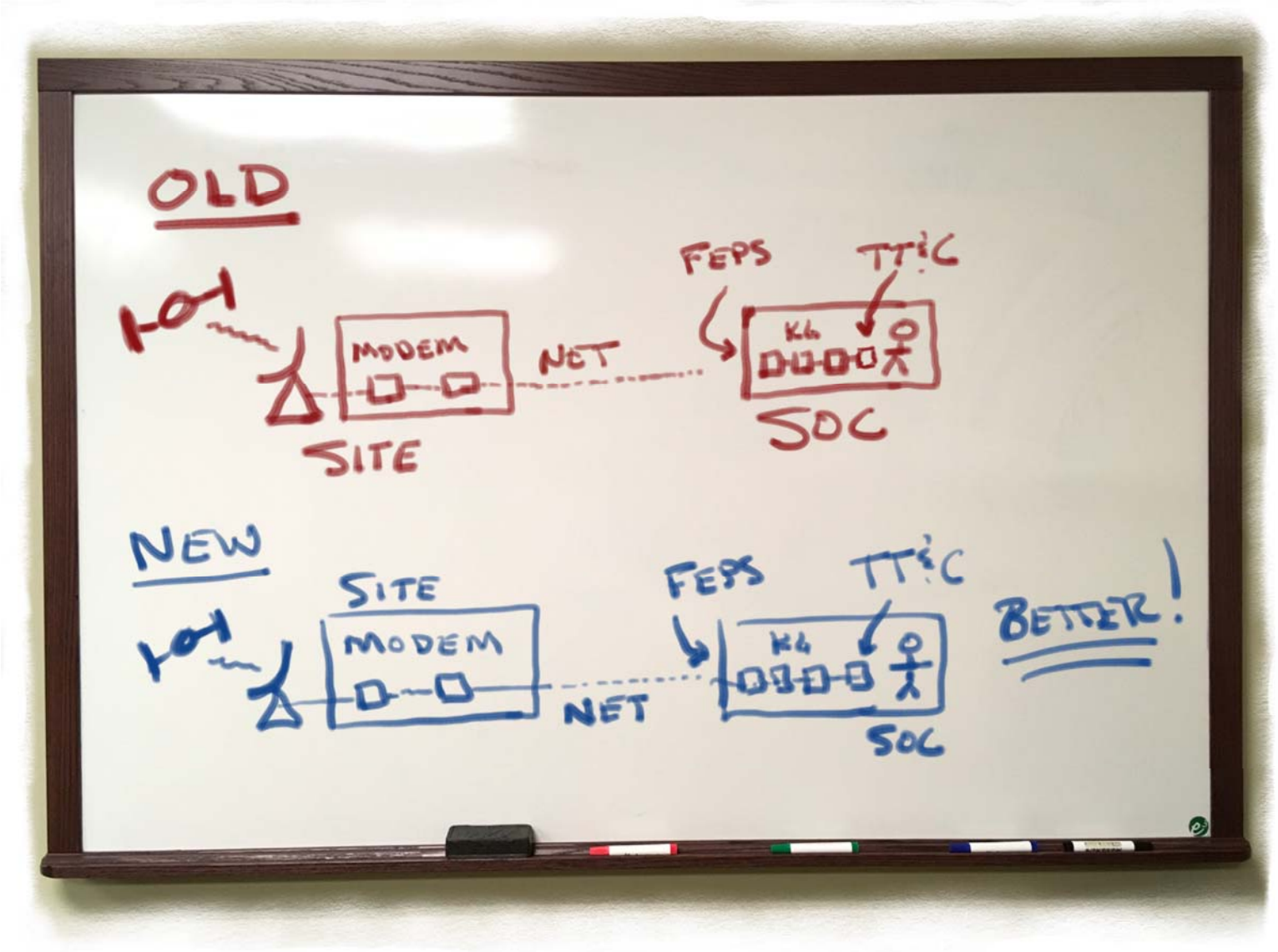
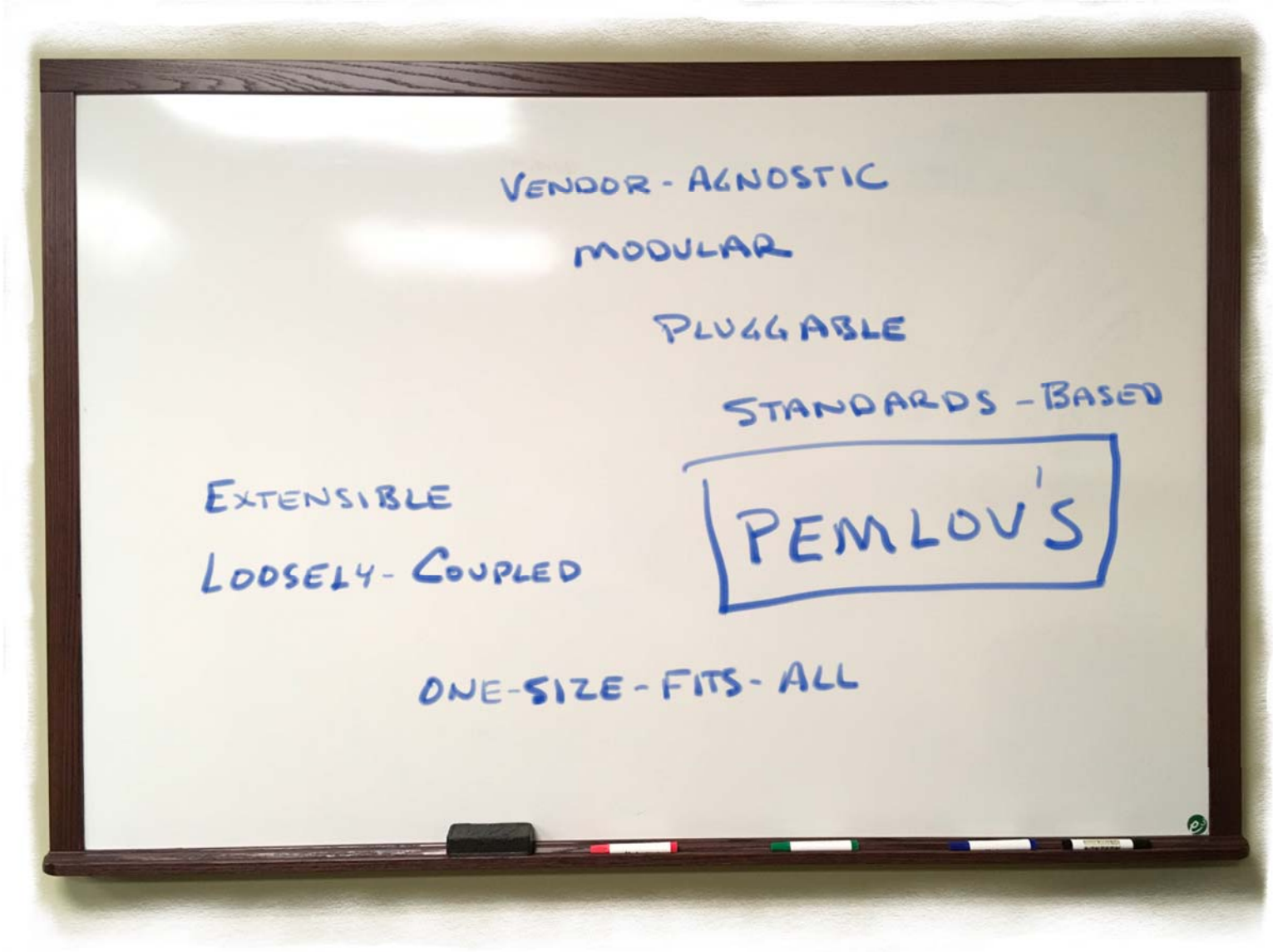
We Always Draw The Same Boxes



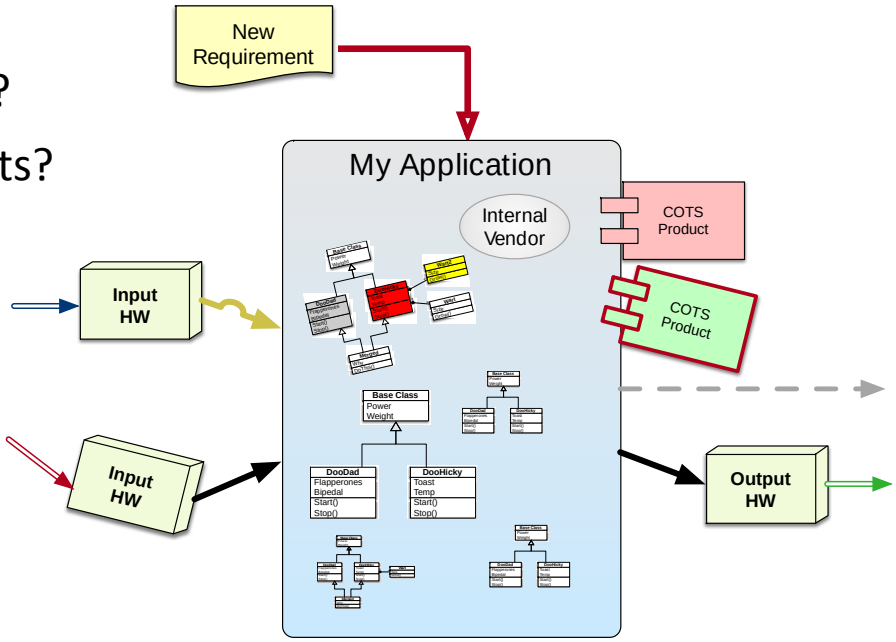
The Impossible PEMLOV'S Architecture



Why Is This Impossible?

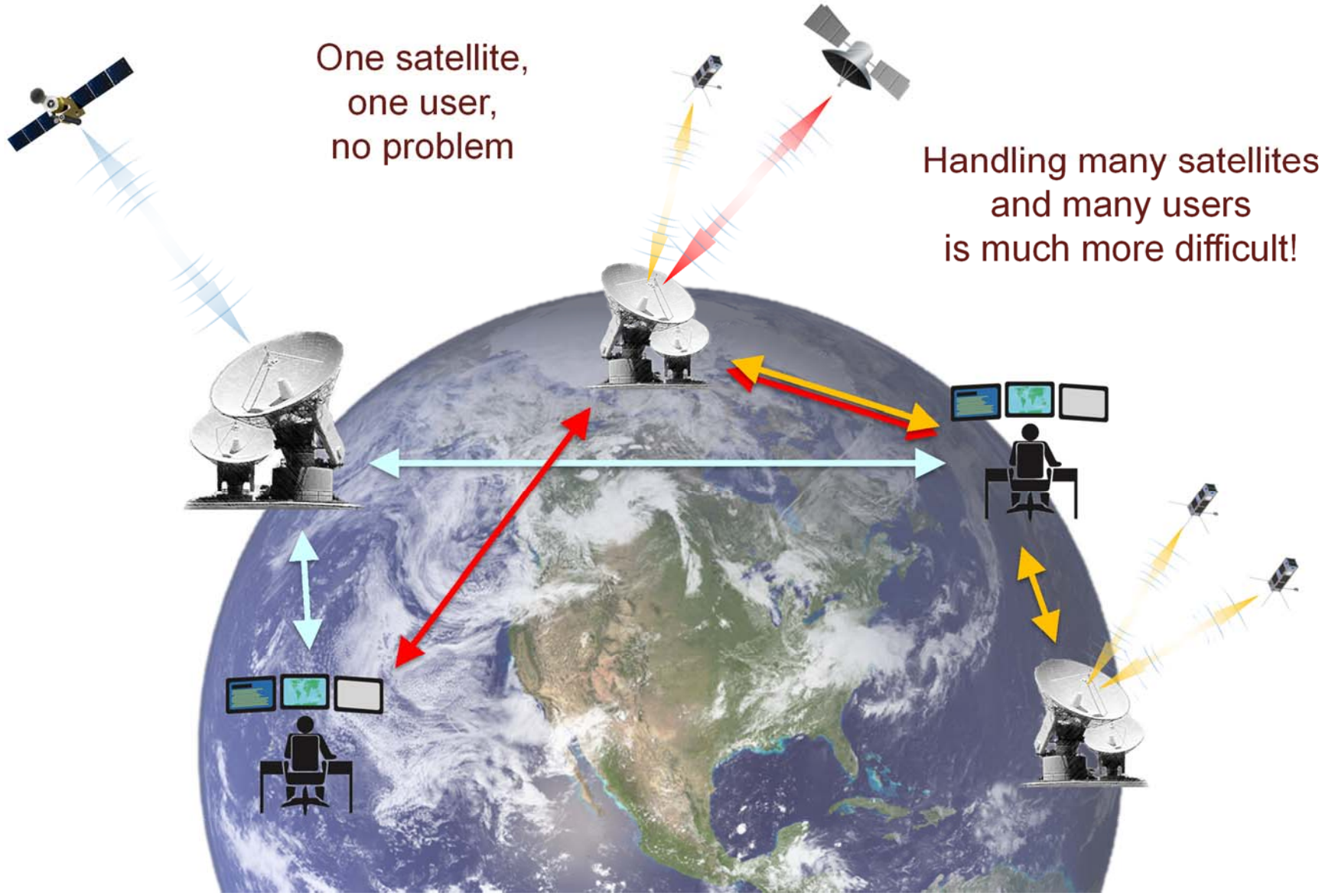
Let's Be Honest!

- **Did You Really Achieve Those Goals?**
  - Is it loosely-coupled?
  - Did you work around your standards?
  - Did you get locked in to COTS Products?
  - Did you get it done on time?



- **The Hardest is One-Size-Fits-All**
  - How did the 2nd and 3rd users do?
  - Are you handling those legacy interfaces?
  - When does version 2.17 come out?

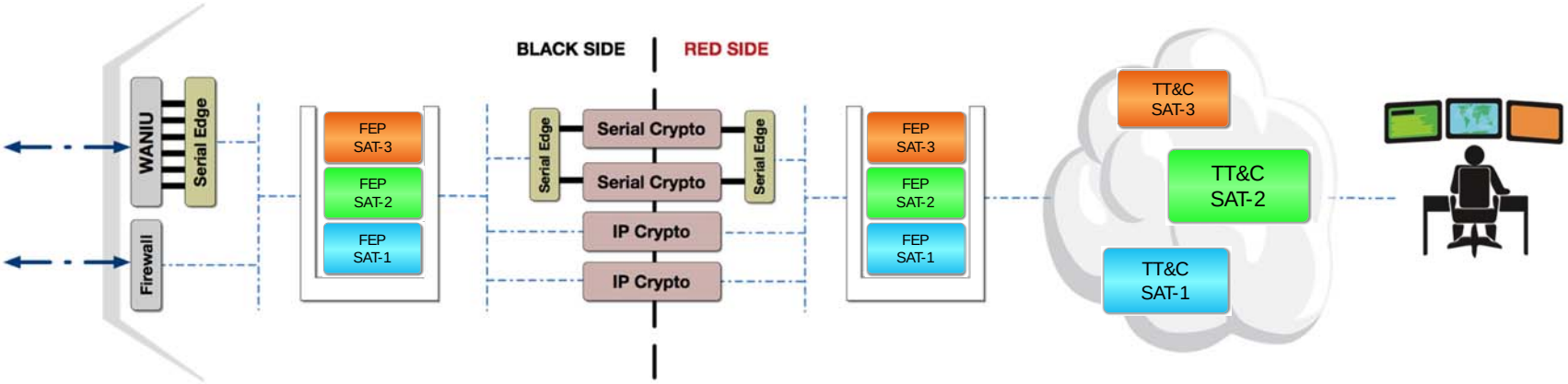
Look At The Real Constraints



Remove Functionality From The "Box"

Reduce The Problem Down To Physical & Security Constraints

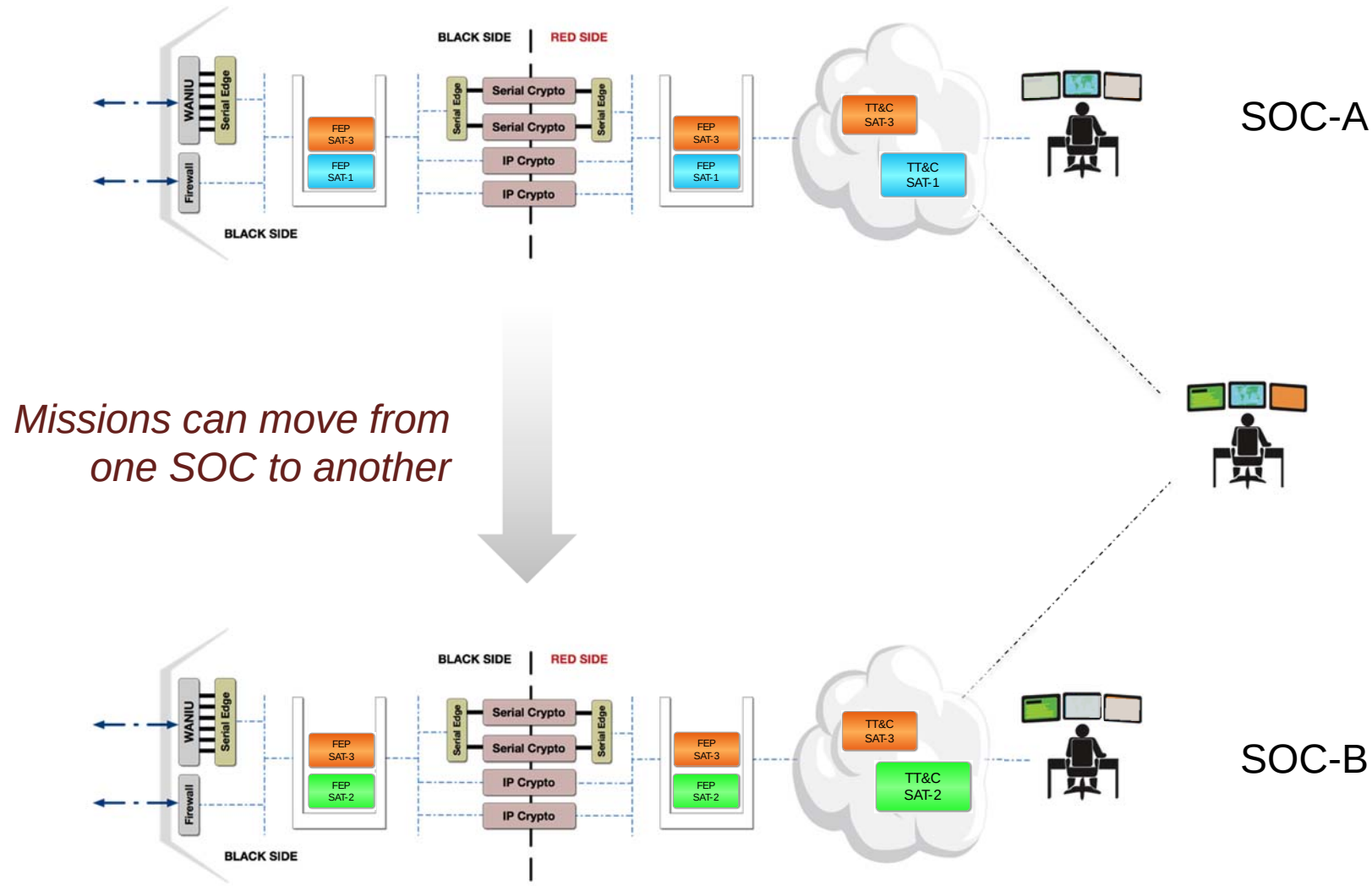
Everything else is networking, and a place to run software



This is your "One-Size-Fits-All" Architecture

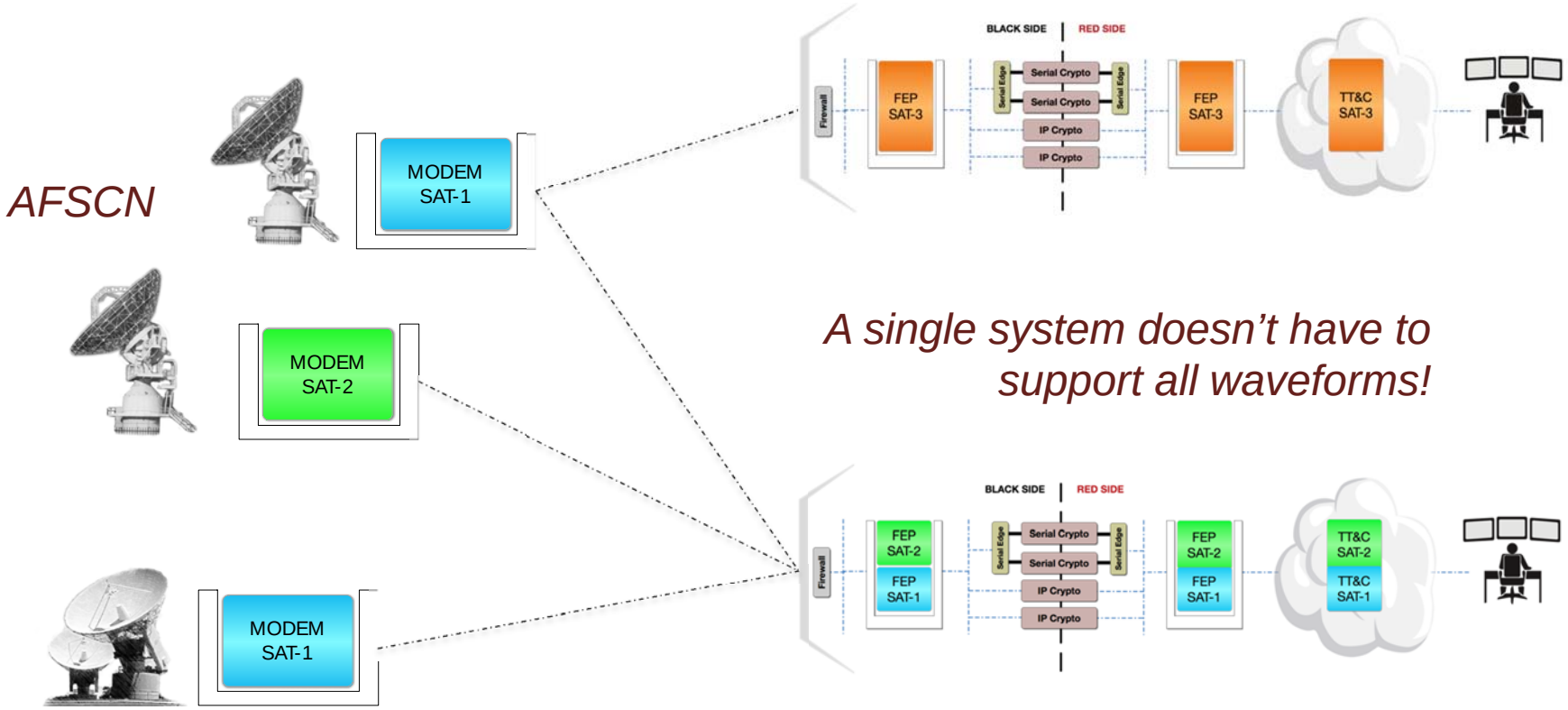
Then add virtualized, software-based functionality Unique To Each Mission

Gain Resiliency



Extending This Across The Ground

With A Software-based MODEM, the SOC can "own" the DSP function

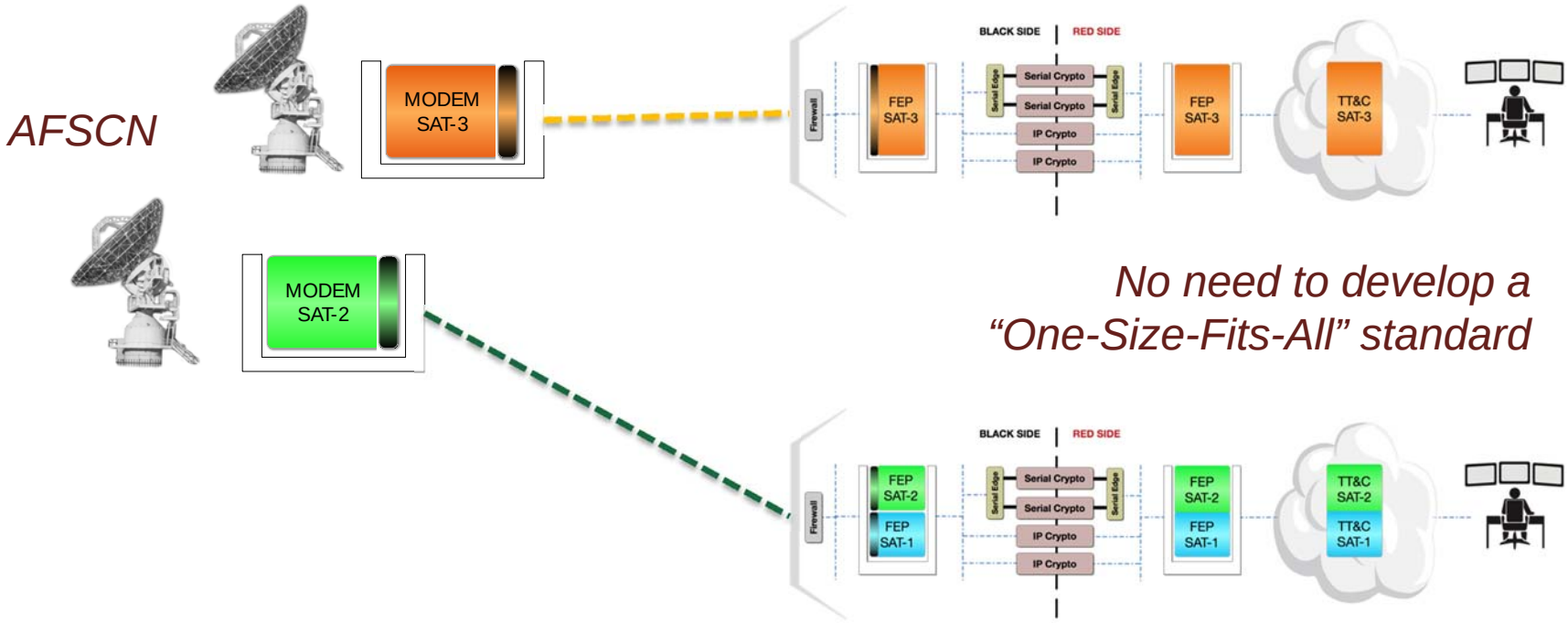


A single system doesn't have to support all waveforms!

Extends to other government, commercial, and deployable assets as well!

Beneficial Side Effects

If the gateway function is embedded in both ends, then the protocols can be unique



No need to develop a "One-Size-Fits-All" standard

All that's needed is an IP network and a set of IA and Governance Standards

Improves Cyber Security Too
Its not there when its not used!
And it can be quickly Reconstituted!

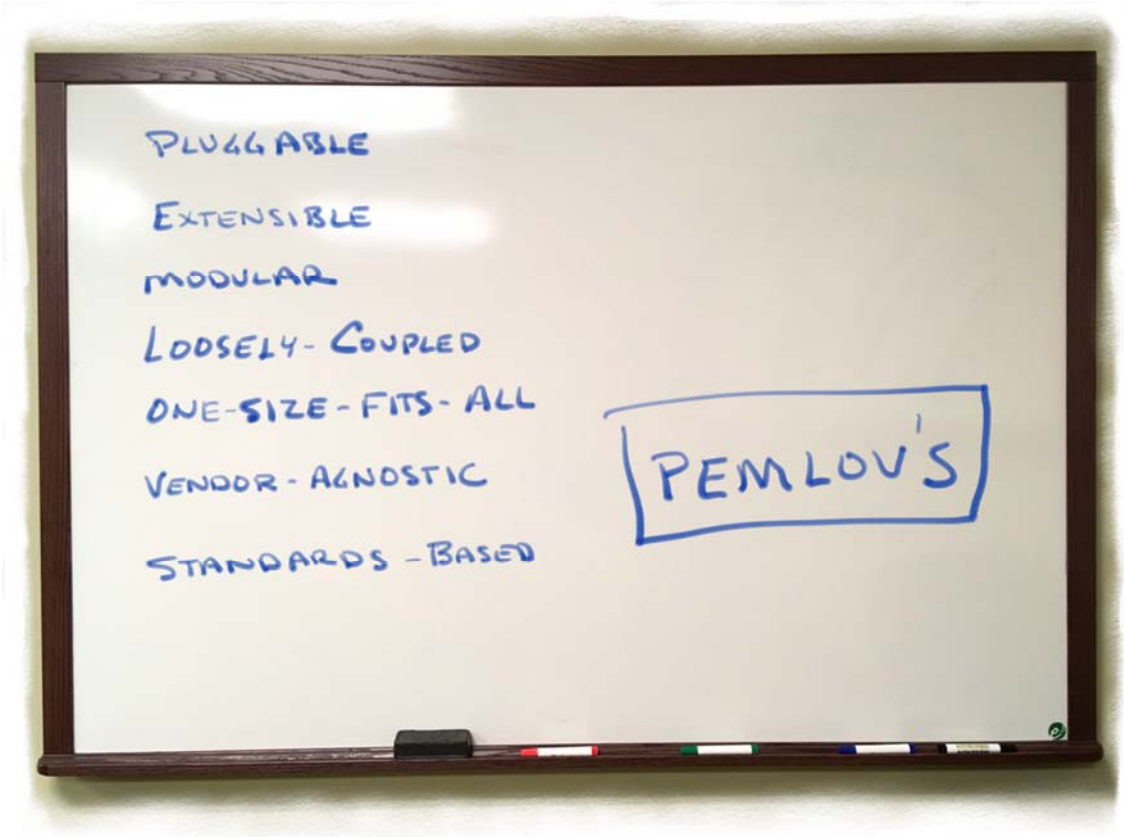
Future Proof

- **Evolves With Time**
  - New programs can come with new technologies
  - Changes can be rapid and have little ripple effect
  - Both operational and experimental capabilities can coexist

- **What's Holding Us Back?**
  - The non-technical challenges are likely the bigger issue
  - Cyber security and governance are already challenges

- **The Best Part**
  - Does not require a Big Bang to get started

Maybe PEMLOV'S Architecture Is Possible After All



This is already deployed on numerous Government, Civil, and Commercial Satellite Programs!

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