There Is No Box

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Rob Andzik
We Always Draw The Same Boxes
The Impossible PEMLOV’S Architecture

- Vendor-Agnostic
- Modular
- Plugable
- Standards-Based
- Extensible
- Loosely-Coupled
- One-Size-Fits-All
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

One satellite, one user, no problem

Handling many satellites and many users is much more difficult!
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

Missions can move from one SOC to another

SOC-A

SOC-B
With A Software-based MODEM, the SOC can “own” the DSP function

AFSCN

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

Commercial

Extends to other government, commercial, and deployable assets as well!
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. It's not there when it's not used! And it can be quickly Reconstituted!
• **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!

Rob Andzik
President
AMERGINT Technologies Inc.
719-522-2813
rob@amergint.com