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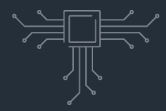
VITA 100

A New Era for Embedded Standards

Steven Devore

January 13, 2025


Electronics


Helicopters

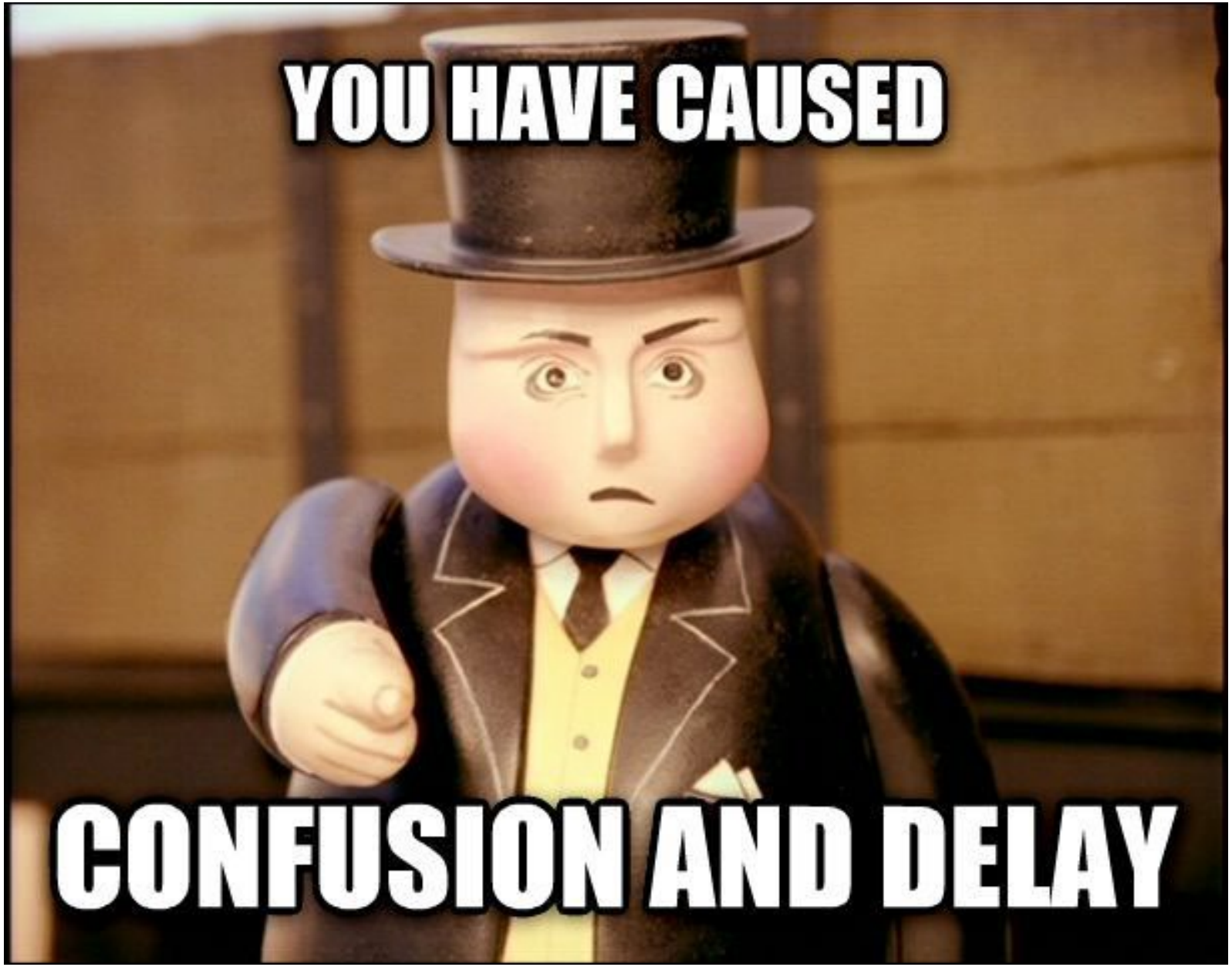

Aircraft


Cyber & Security


Space


Unmanned Systems


Aerostructures



WHY - VITA 100 is needed now

HOW - VITA 100 is building on VPX

WHAT - VITA 100 is going to standardize

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Why VITA 100 is Needed Now







VITA 100 Objective - Part A:

1. Continuation of VPX but a leapfrog in technology.

2. Completion when the technology is realizable.

VITA Historical Standard Release Schedule – 15 Year Cycle

1995

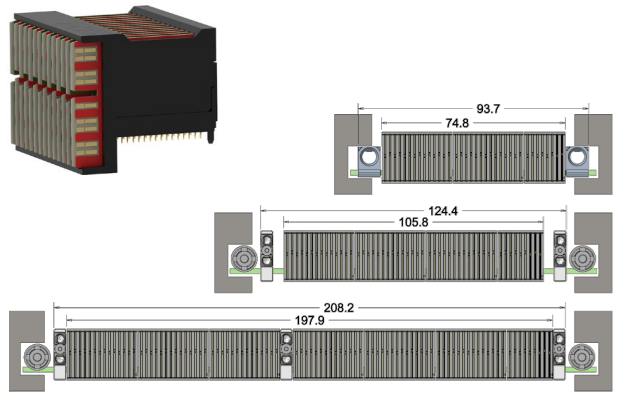
VMEbus Technology™

2010

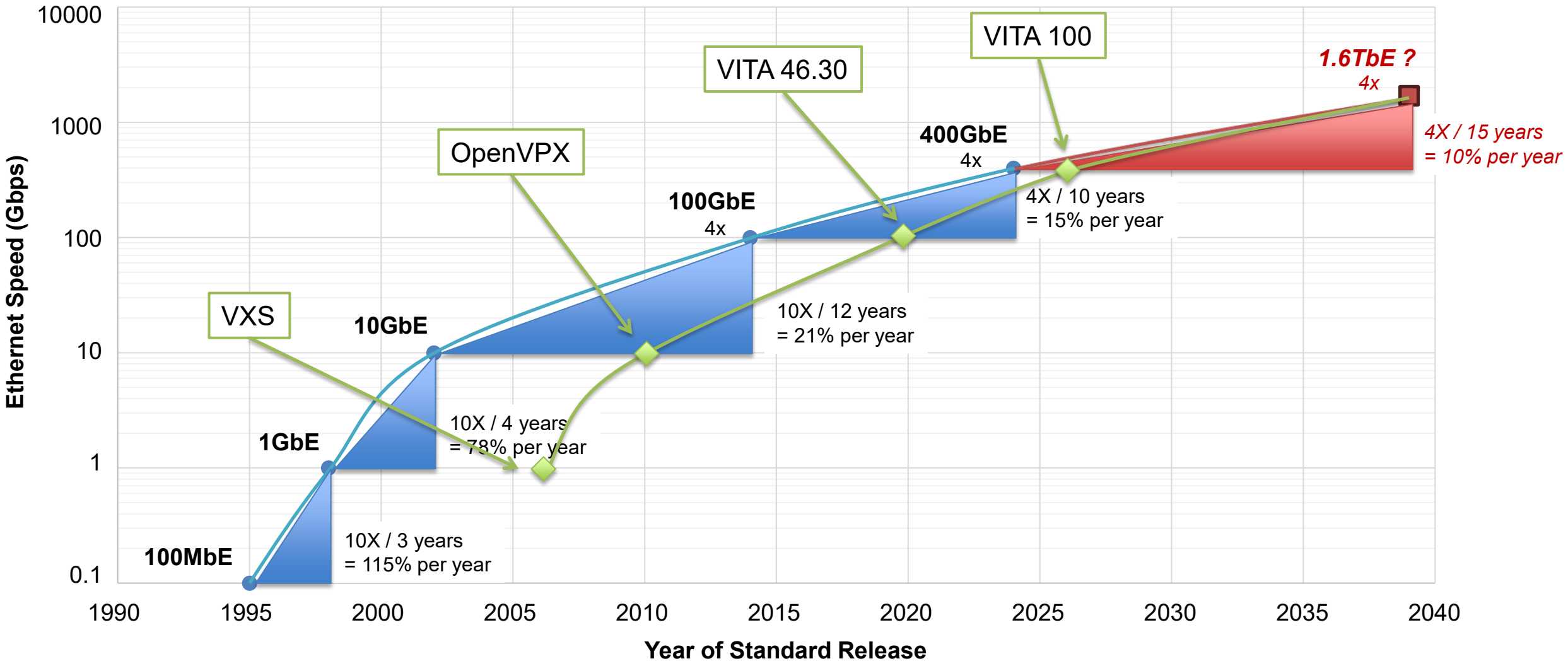
OpenVPX™

2025

VITA 100



IEEE Ethernet Speed and VITA Standard Support Roadmap



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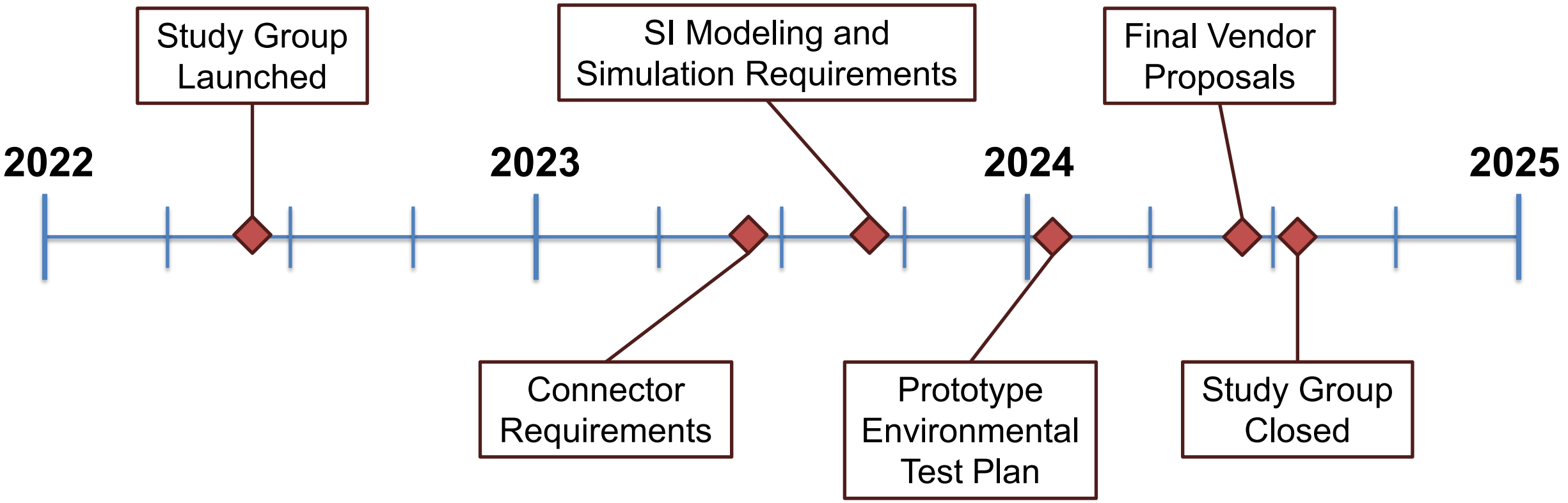
How VITA 100 is Building on VPX

The VITA 85.106 Study Group Achieved its Primary Goal

Establishing the feasibility of the VITA 100 objectives with current technologies.



VITA 100 Objective - Part B:

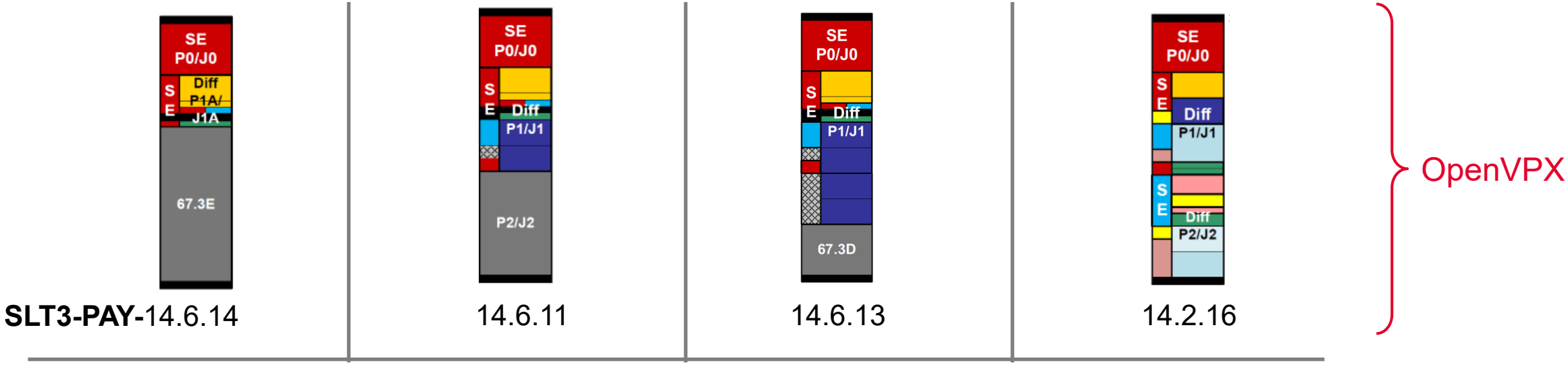
- Learn from the extensive history of VPX implementations
  1. **Enhance the Interoperability**
  2. **Advance the embedded capabilities**
  3. **Complete Qualification prior to public release**

Enhance the Interoperability

1. Minimize the number of Slot Profiles required by doubling the available pin count

2. Maintain chassis/architectural backwards compatibility while enabling upgradability.

Slot Profile Scaling from OpenVPX



SLT3-PAY-14.6.14 | 14.6.11 | 14.6.13 | 14.2.16

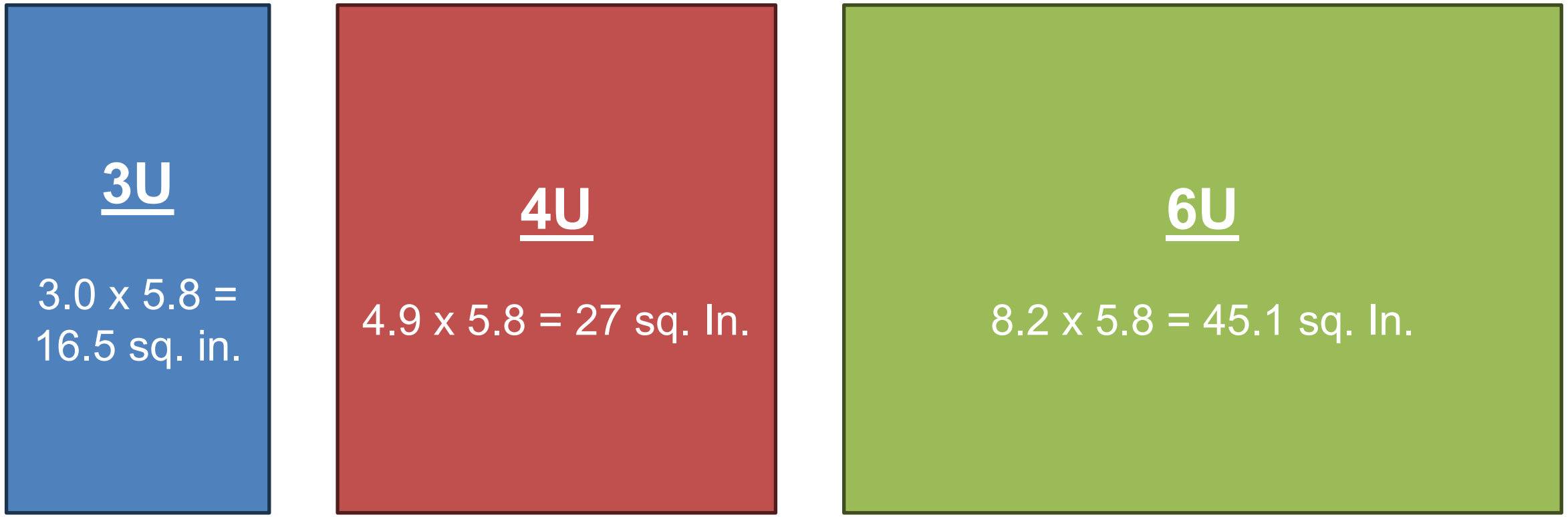
Advance the embedded capabilities

1. Maximize the data BW by supporting the emerging protocols of 400GBASE-KR4 and PCIe Gen6.

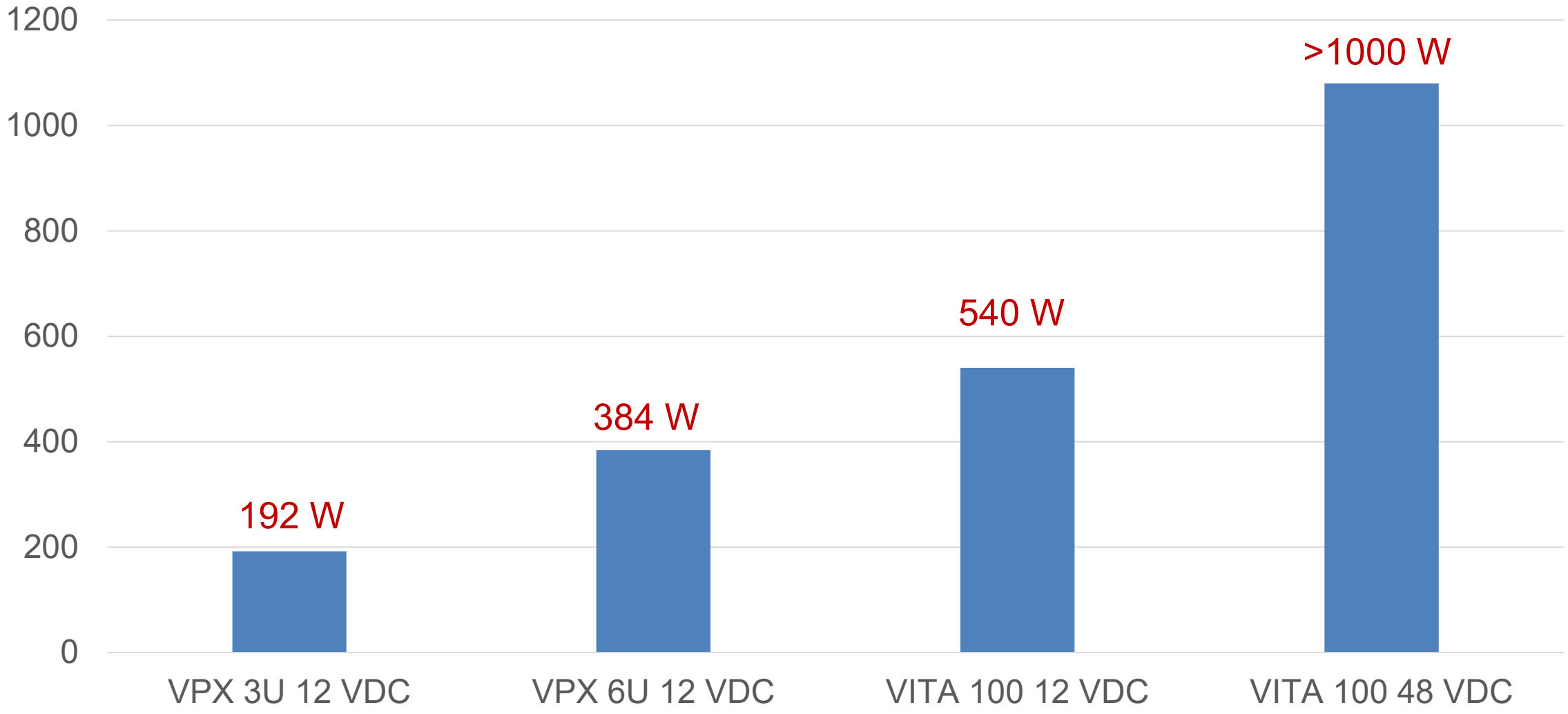
2. Increase PIC available power & thermal dissipation capacity for the higher power density devices.

3. Define a larger 4U form factor supporting the latest, larger chipsets that no longer fit within the 3U bounds.

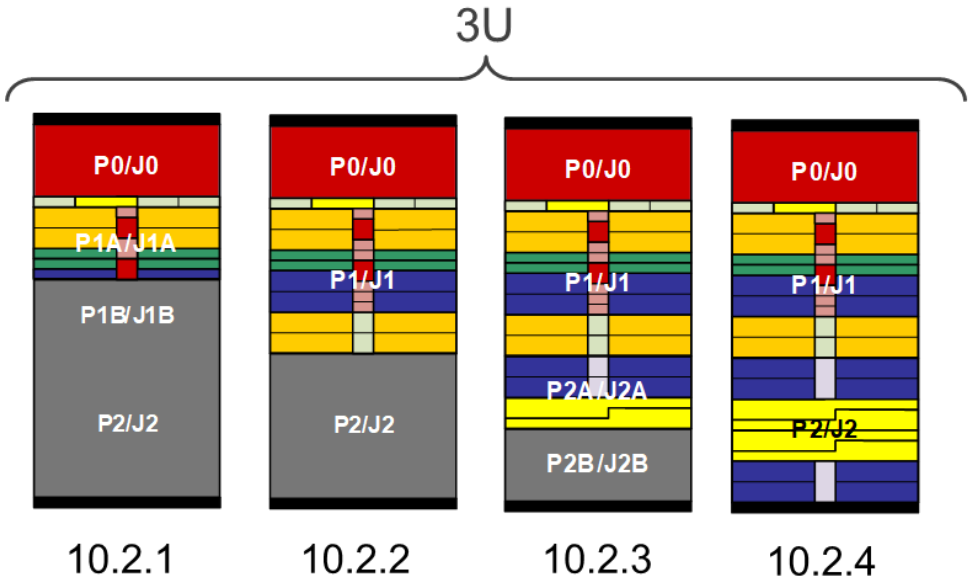
Each Form Factor is ~60% Larger Usable Area



2X Increased Power Capacity



Slot Profile Scaling Across 3U / 4U / 6U Form Factors



Complete Qualification prior to public release

1. VITA 47 environmental standards

2. Evaluate to VITA 72 vibration levels

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What VITA 100 is Going to Standardize



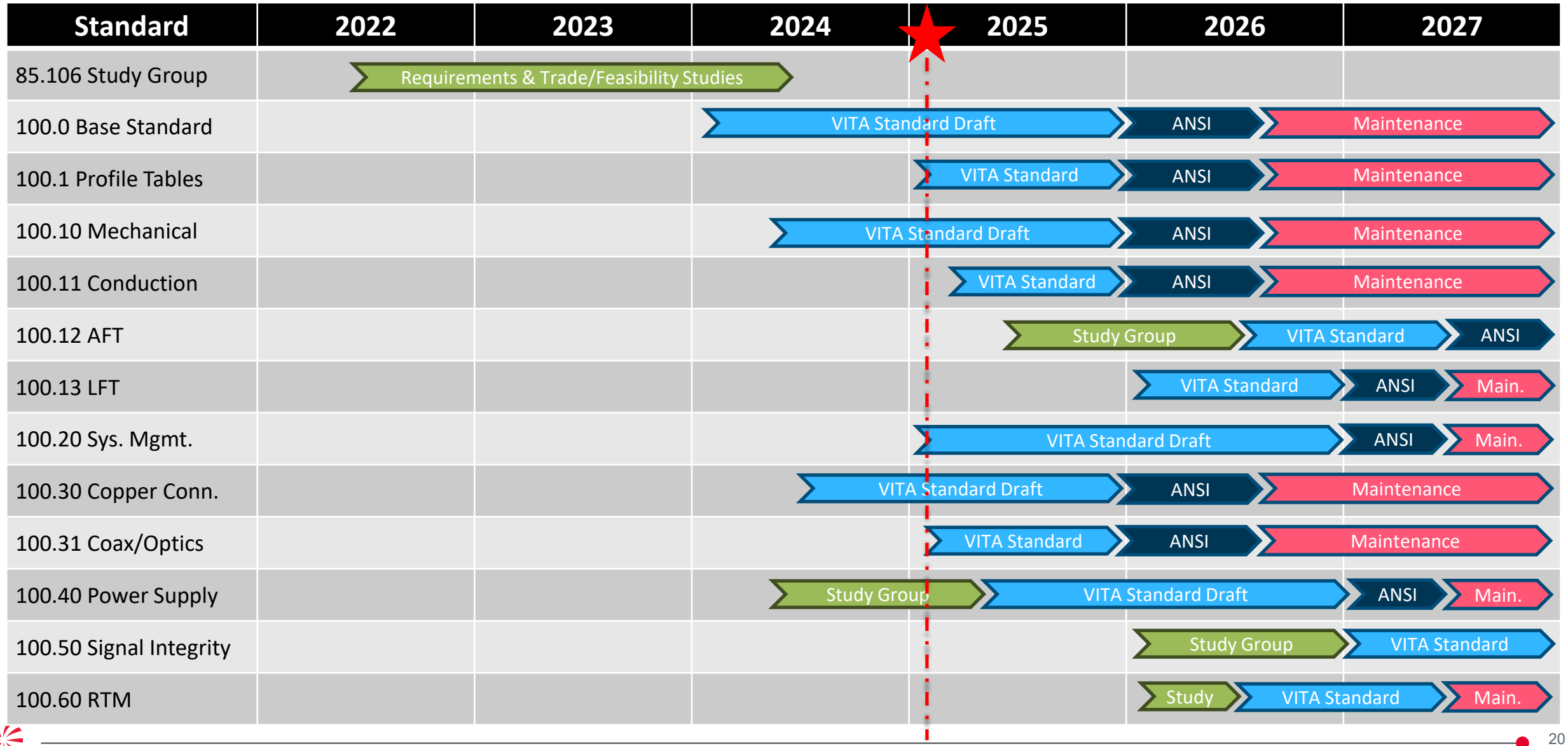




VITA 100 Suite of Standards

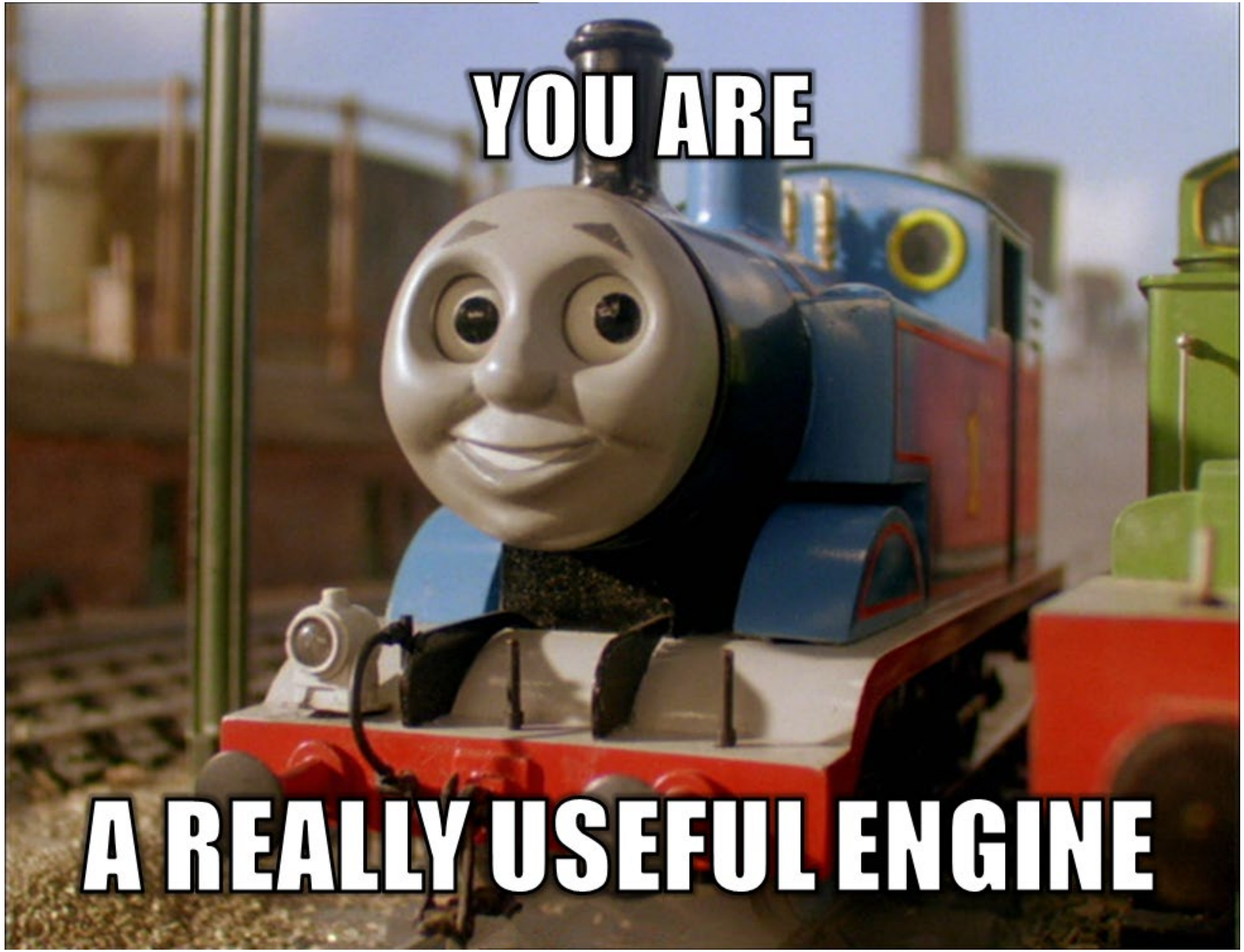
System/Electrical	• **100.0** = 65.0 & 46.0 *VITA 100 Base Standard* • **100.1** = 65.1 *VITA 100 Profile Tables*

VITA 100 Suite of Standards Roadmap



VITA 100.0 & VITA 100.1 Sponsors

- Abaco
- Amphenol
- Cubic
- Curtiss Wright
- Elma
- GD Mission Systems
- GTRI
- Intellisense
- L3 Harris
- Leonardo DRS
- MIT LL
- NEI
- Northrop Grumman
- Raytheon
- TE Connectivity



VITA 100 Top 5 Advancements

1. Speed: 4X the Supported Data Rates
2. Density: 2X the Number of Pins
3. Power: 2X the Available Power
4. Size: 4U Form Factor Added
5. Interoperability: VPX Compatible & 5X Fewer Profiles

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THANK **YOU**
FOR YOUR ATTENTION

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