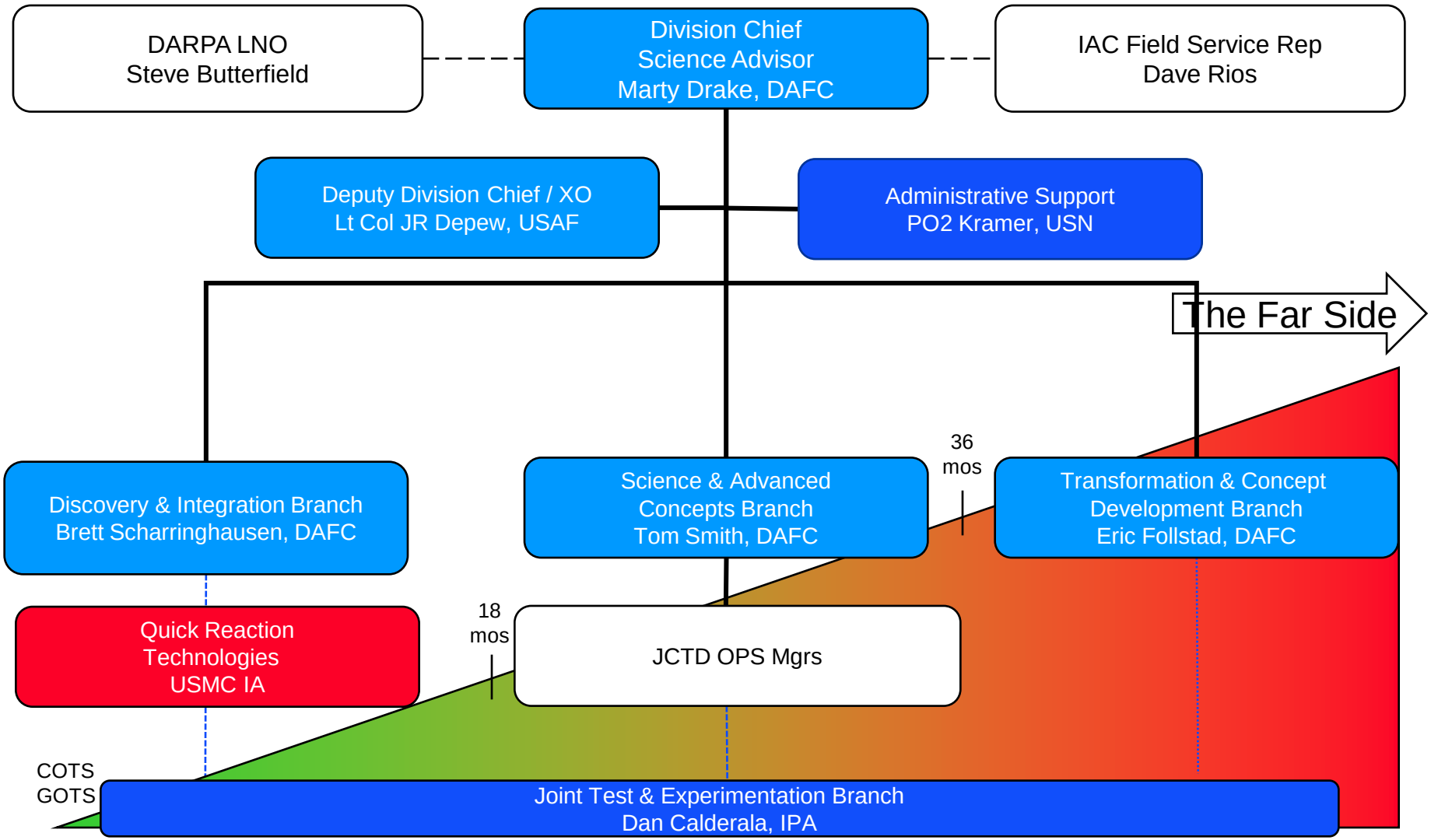
US Central Command
Technology Development

Priorities

- Defeat ISIL; prevent spread of sectarian-fueled radicalism
- Continue to support Afghanistan
- Defeat Al Qaeda
- Counter malign Iranian influence
- Support Yemen; keeping it from becoming an ungoverned space
- Maintain credible general and specific deterrent capability and capacity to counter threatening nation states
- Prevent/counter the proliferation of weapons of mass destruction
- Protect lines of communication
- Shape and support cross-COCOM, interagency, and Allied/coalition partnerships
- Improve bi-lateral/multi-lateral partnerships, building partnered ‘capacities’, and improving info sharing, security, and security

Science &Technology Division
(CCJ8-ST)



U.S. Central Command Tech Focus

- We focus on the JOINT solution that has the potential to satisfy a JOINT validated need
- Separate from the many technology needs of our Components those technology challenges which:
  - *Do not have a readily available solution*
  - For high-impact needs there is *insufficient activity pursuing a solution*
- Seek out game-changing technologies which our Components don't know they need

Some technology areas we "pursue":

- **Detection of CBRNE at tactically significant distances; with emphasis on a little "e"**
- **Pre-shot counter-sniper, counter-mortar, counter-RPG technologies; with emphasis on automated systems**
- **Technologies which enable the transfer of information more securely, more quickly, to a wider set of users, to include the warfighter when it makes sense, with less bandwidth and dedicated support resources, e.g.:**
  - **Multi-level Security over single architectures**
  - **Bandwidth compression / reduction techniques**
  - **Data to Decision [data=>info=>knowledge=>understanding=>wisdom]**
- **Through automation, remote action, new and novel techniques & technologies which reduce risk and / or stress on the force and / or improve the efficiency and effectiveness of our action(s)**
- **Technologies which allow for greater persistence over the battlespace with fewer resources; employing improved sensor technology providing greater fidelity of information**

. . . . . all at an affordable cost.

Thematic areas of concern

(not in priority order)

- Detect / Defeat:
  - IED initiators / initiator systems
  - Buried / concealed IEDs
  - Production and assembly of IEDs
- HME production standoff detection
- Culvert access denial / alerting
- Persistence in surveillance
- Biometrics
  - Identity dominance
  - Force protection / access
- Non-lethal vehicle / vessel stop
- Reduce stress on the force:
  - Force Protection requirements
  - Increased automation
- Anti-swarm lethal / non-lethal
- More efficient / effective / timely trng
- Predictive analysis techniques
- Voice to text technologies
- Holding all targets at risk
- C4ISR systems:
  - Resiliency
  - Info sharing between systems
  - Multi-level security
  - Faster … Better sorting / retrieval / analysis
  - On the move w/ GIG access to tactical edge
- Tagging, Tracking, and Locating (TTL)
- Lightweight “x” with greater “y”
- Energy & Power
  - More pwr per unit of wt / cube / fuel usage
  - Renewables
- Scalable effects – non-lethal to lethal
  - Directed Energy
  - Kinetics
- True SA for Blue … Fused Red
- Sustaining the force – reduced size, weight, amount, and retrograde
- Any sensor any shooter; Soldier as a sensor; any adversary any battlespace … anytime
- All things ‘cyber’

Why it's hard to advance technology…….

from outside the Services

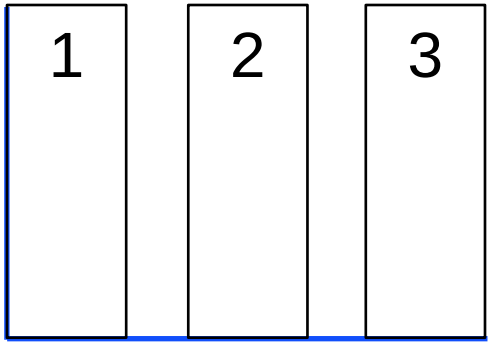
ASD(R&E) Challenge to the Services

“How do we get to a better capability set with less money?”

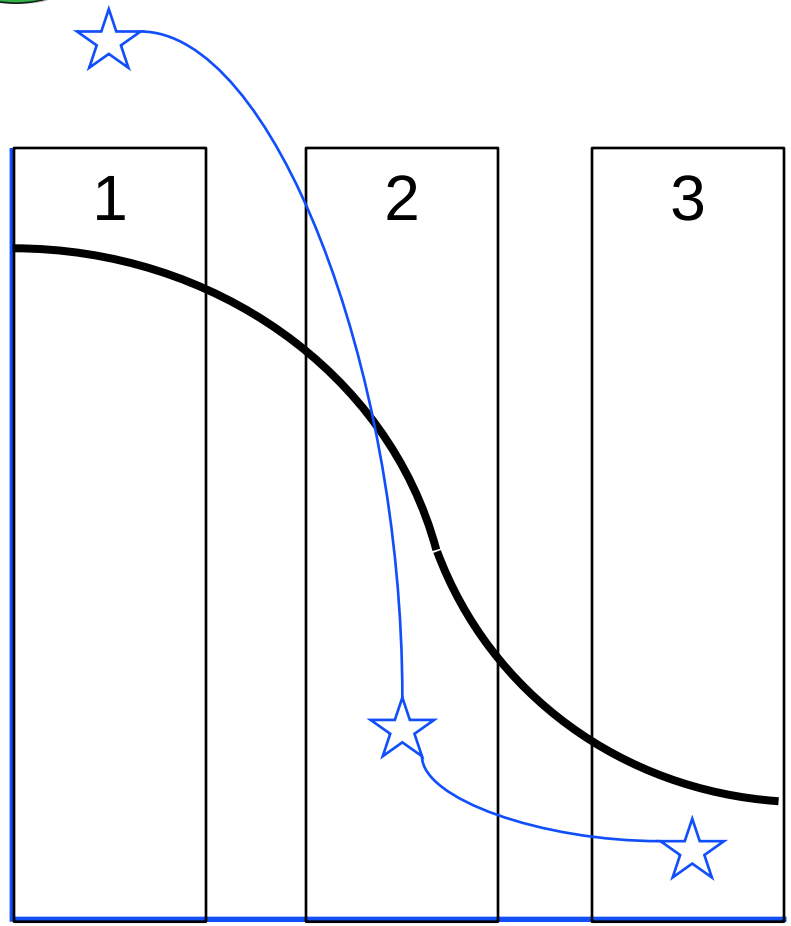
- Mr Al Shaffer, March 2015

ASD(R&E) Priority of Effort (in priority order):

1. **Mitigate current and anticipated threats**
2. **Affordably enable new or extended capability into existing systems**
3. **Create technology surprise**



Level of effort



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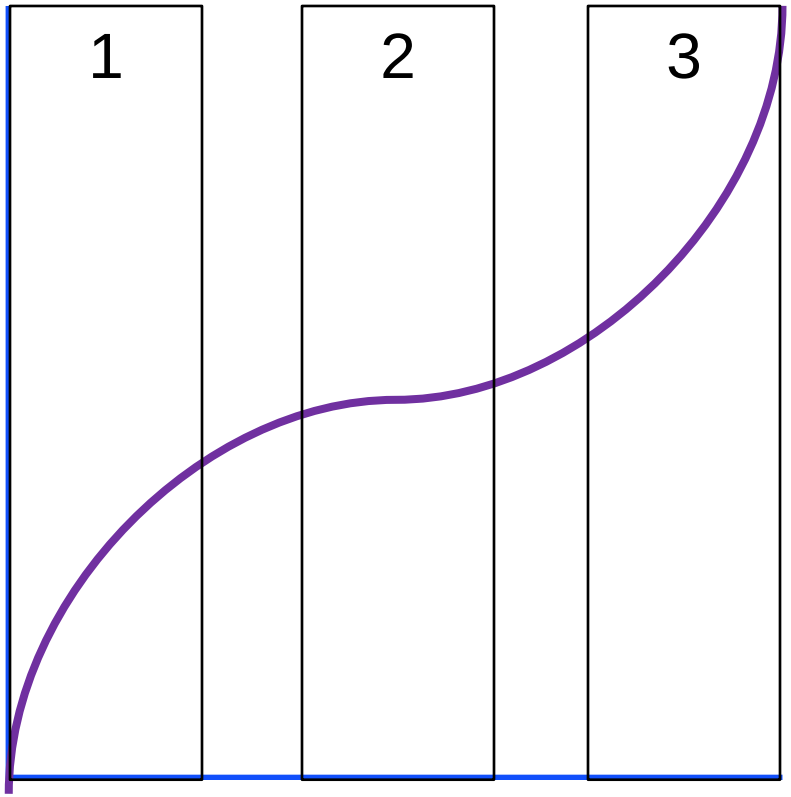
Potential to change the cost calculus



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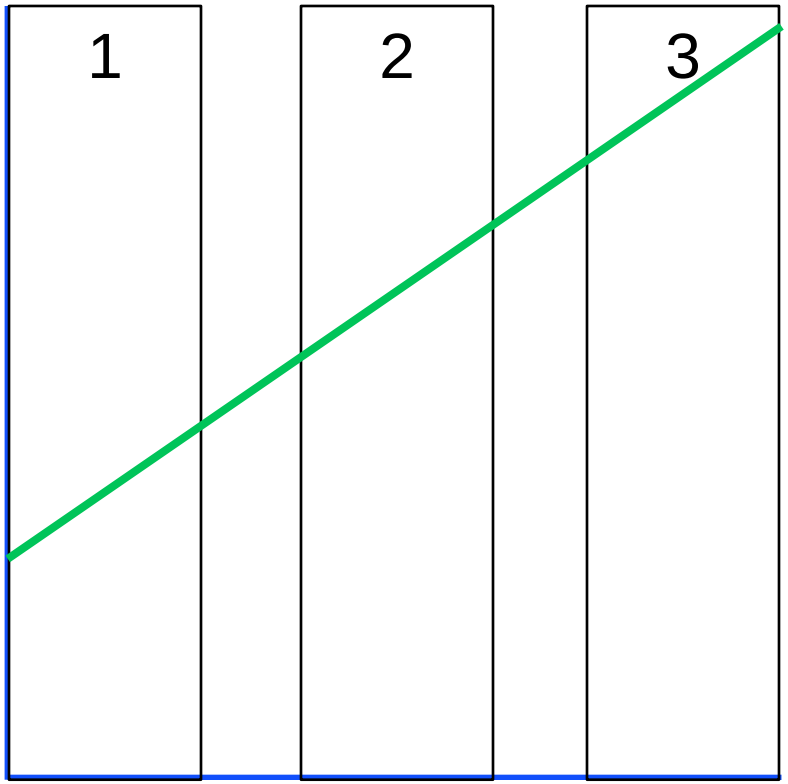
Investment required



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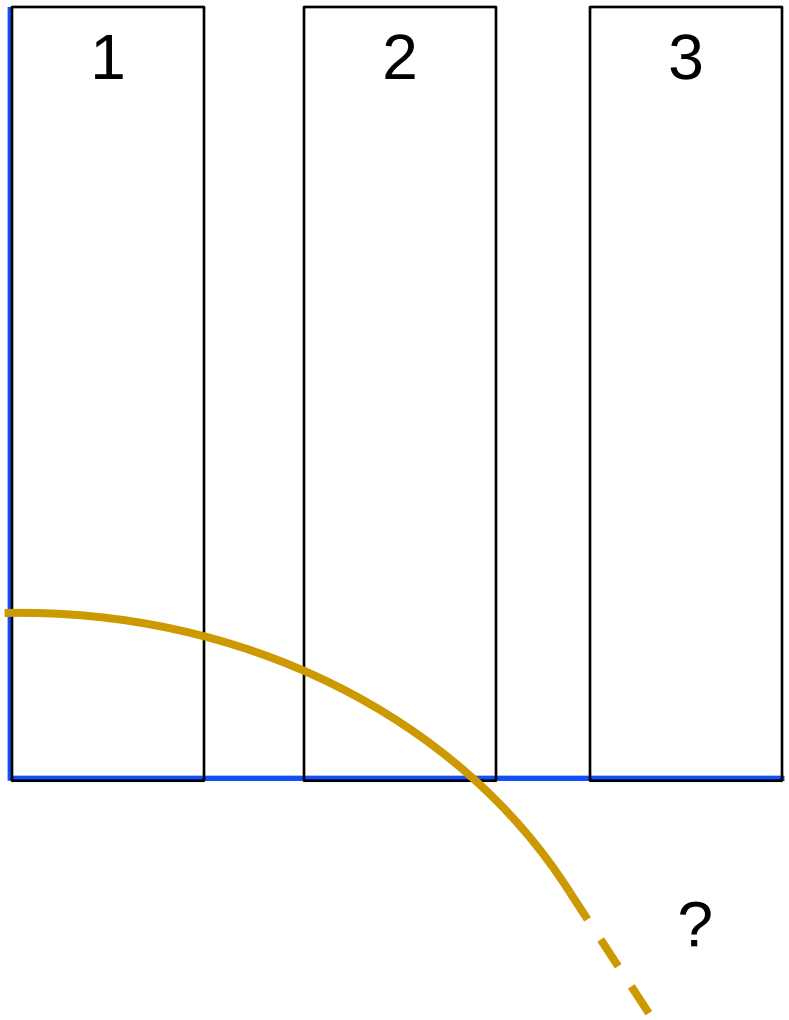
Availability of funds



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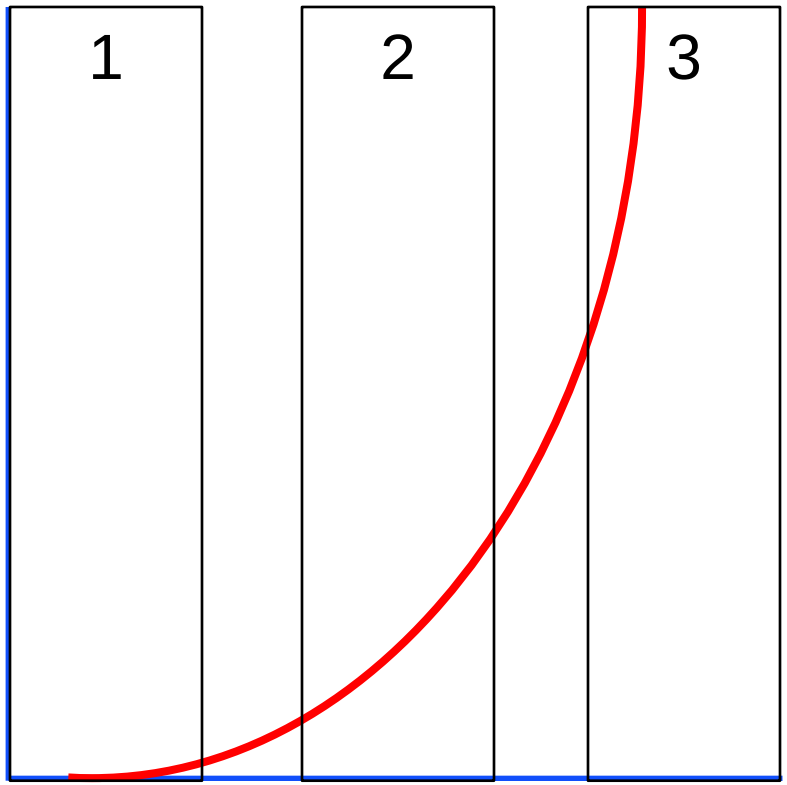
Starting inertia



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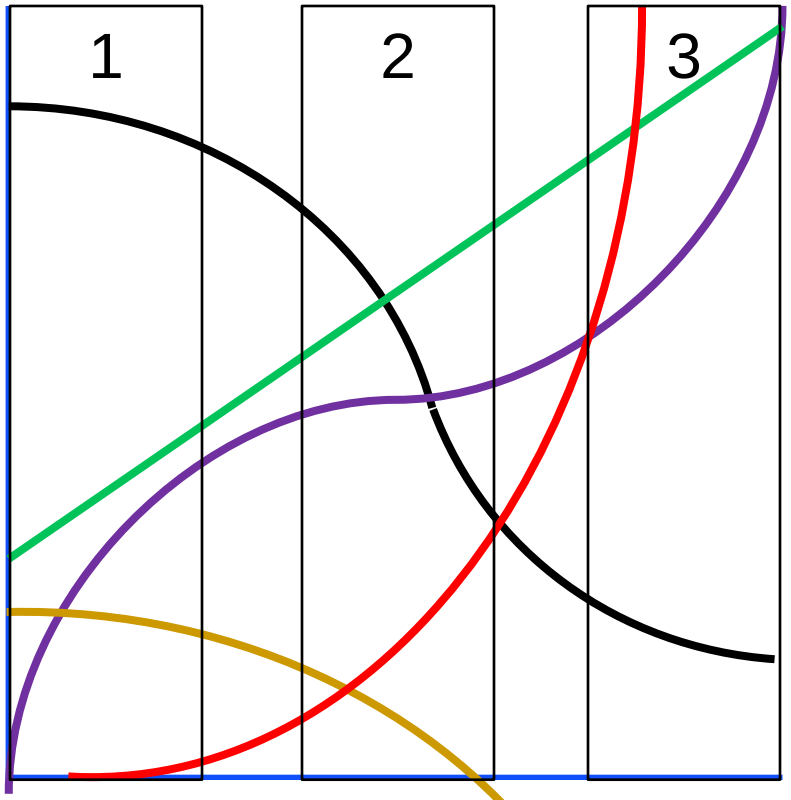
Putting it all together



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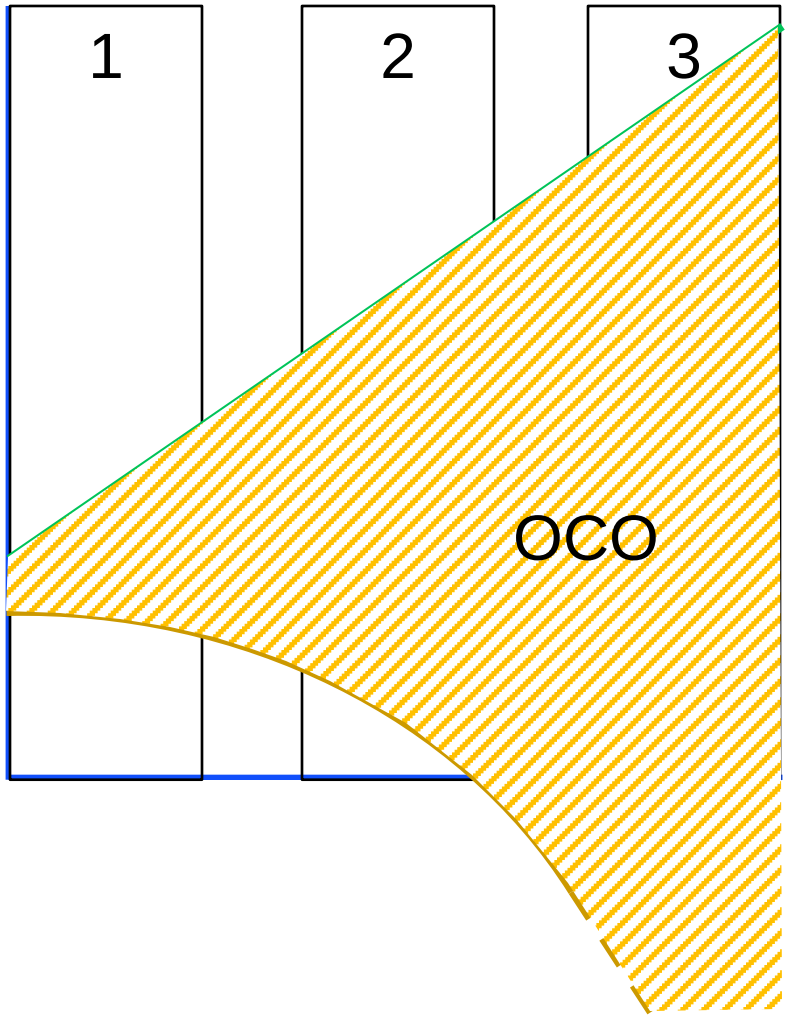
Investment vs Availability of funds



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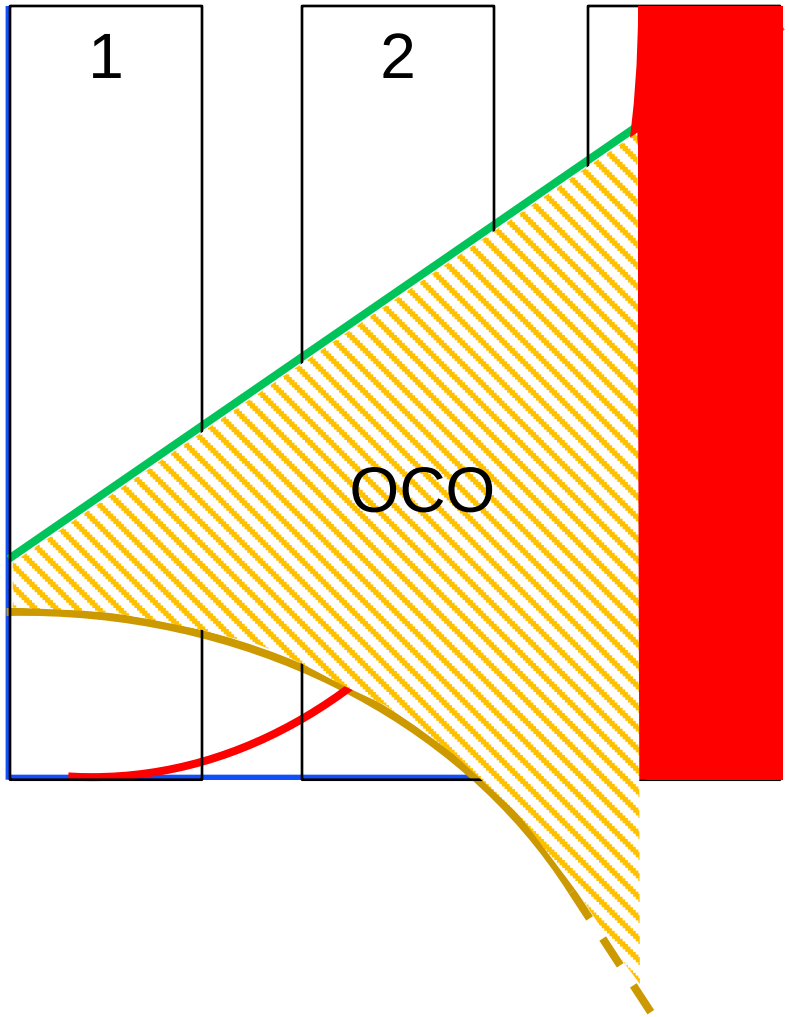
Investment vs Availability of Funds vs Starting Inertia



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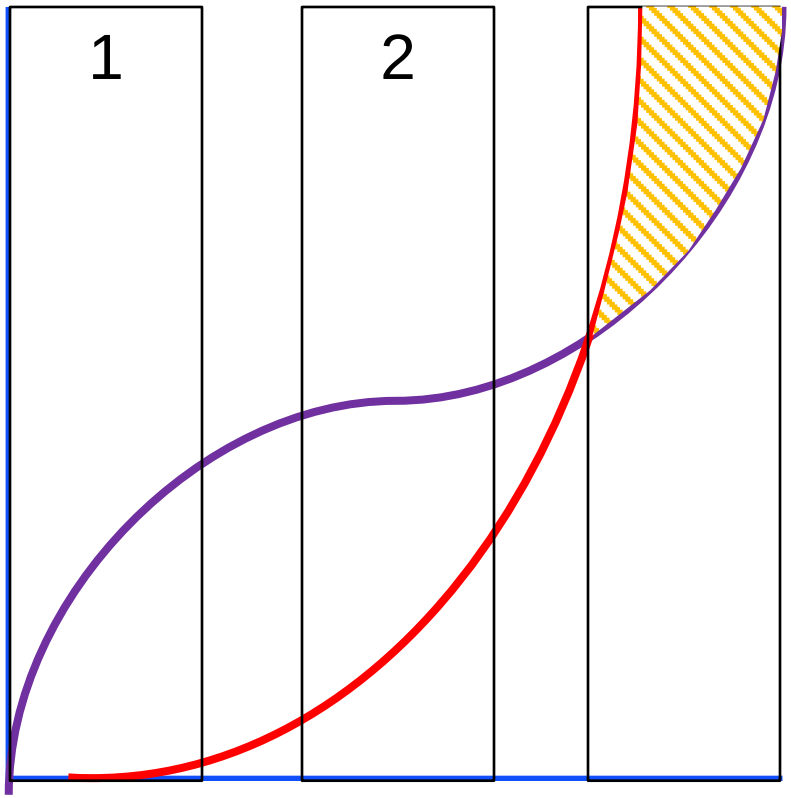
Potential to change the cost calculus vs Starting inertia



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When proposing a solution …
The Heilmeier Questions … adapted

- **What are you trying to do?**
  - **Articulate your objectives using absolutely no jargon**
- **Who should care?**
- **How is it accomplished today?**
- **What are the limits of the current practice?**
- **What is new in your approach?**
- **Why do you think you will be successful?**
  - **How do you define / measure success?**
  - **What is your strategy to get there?**
- **How long will it take and at what cost?**
- **What are the risks?**
- **What is your risk reduction / mitigation strategy?**
- **What are the payoffs / return on investment?**

For Technology Developers …
Some Points to Consider

- **Seek to understand how your solution fits in the overall DoD system of systems**
  - **Integrate with legacy systems vice replace them**
  - **Open architectures receive higher interest / support**
- **Consider partnering with others to bring a 'greater' solution to the table - system best-of-breed vice at the component level**
- **Determine your impact to a Service program of record**
  - **Training**
  - **Initial fielding**
  - **Sustainment**
- **Substantiate your position with data**
  - **Testing**
  - **Cost-benefit analysis**

Points of Contact

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  Experimentation
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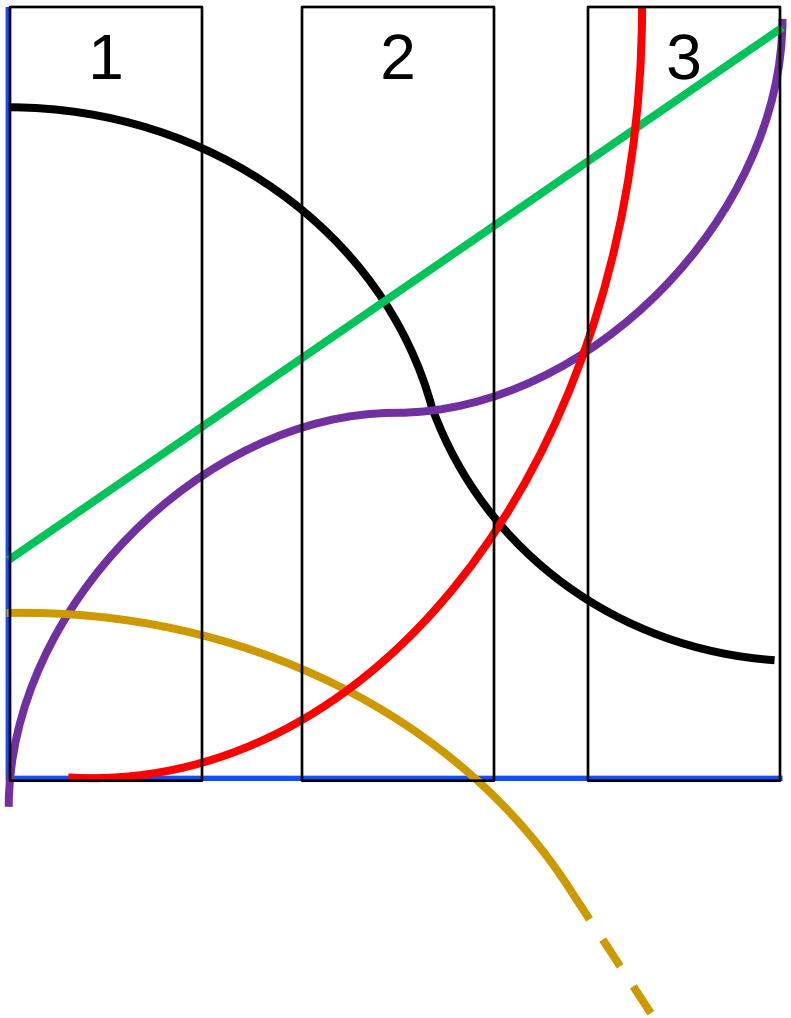
- **USMC Individual Augmentee (IA)** 813-529-8109 varies - call
  Quick Reaction

Questions



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