GENI
Annual Project Reviews and Year 2 Funding

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www.geni.net

- Let you know what's going on

- Describe GPO's next steps

- Give you a chance to fix our mistaken ideas . . .
- . . . and/or get back on track by end of Spiral 1

Successful proposals will receive *subcontracts*, rather than research awards, with the following implications:

- "Large" proposals must show realism for the management approach, and practical understanding of the effort, as well as technical merit.

- Specific deliverables and associated milestones must be clearly described.

- Emphasis on concrete, near-term results.

- Leveraging existing infrastructure (software, testbeds, etc.) is *good* because it reduces the risk of failure and may also reduce the cost.

- Clever ways to avoid new development work are *good* because they reduce the risk of failure and may also reduce the cost.

- Funded efforts will receive ongoing review by the GPO for GENI-relevant progress.

- Efforts with ongoing inability to make progress will be terminated.

The GPO currently intends to structure small and large subcontracts as follows: one year of funding, followed by two option years which will be exercised (funded) if the GPO determines that the subcontract is making useful progress. The GPO reserves the right to change this approach during negotiation of subcontracts.

- GPO has conducted annual reviews with all but one project
  - Most clusters came to Cambridge in person, as a cluster
  - Face-to-face meeting focused on achievements, challenges, initial planning for Spiral 2
  - GPO and participants came to shared understanding of the status of each and every project milestone
  - (Solitary projects were done over the phone)

- GENI Wiki was updated as needed with corrected milestone status

- This review provided important **input** to the GPO review process
  - **It is not the only input**
  - There are many reasons why things can go poorly
  - GPO has a reasonably good understanding of what is going on in each project, thanks to GPO system engineers
  - GPO judgment is involved for projects that are having trouble

- GPO will exercise options for a large majority of projects, because they appear to be going well

- Those projects will then receive their Year 2 funding at already-agreed funding levels (or higher)

- GPO will work with projects that appear to be having difficulty in making progress

- For projects recovering sufficiently by the end of Spiral 1, GPO will exercise options (perhaps at a reduced level)

- You will (soon) know definitively where you stand

- The following slides give an indication

- Colored bars are mechanically derived from the milestones as agreed in Annual Project Review, and publicly visible on the GENI Wiki

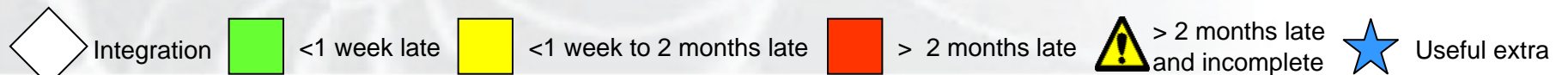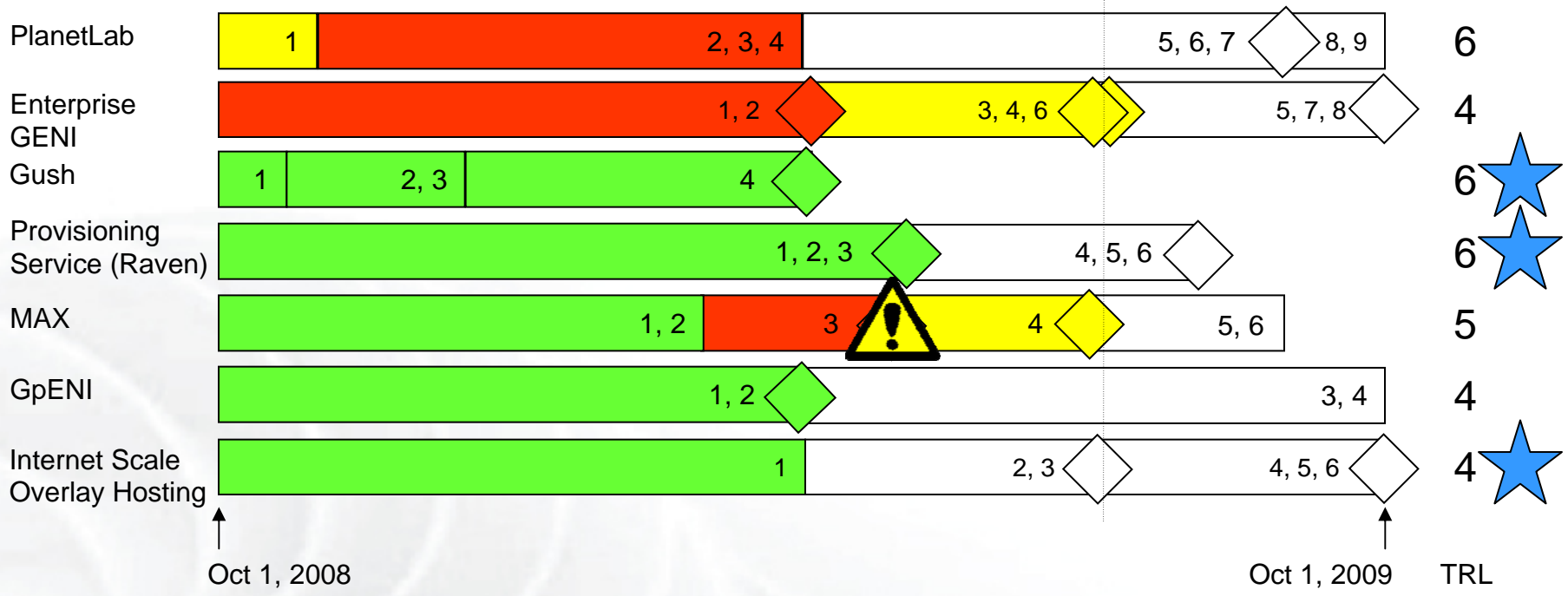 - **HINT: red is bad; a lot of red indicates a problem**

ORBIT | 1 | 2 | . | 3, 4 | 5 | 6 | **6**

WiMAX | 1 | 2 | 3 | 4, 5, 6 | **4**

Oct 1, 2008   Oct 1, 2009   TRL
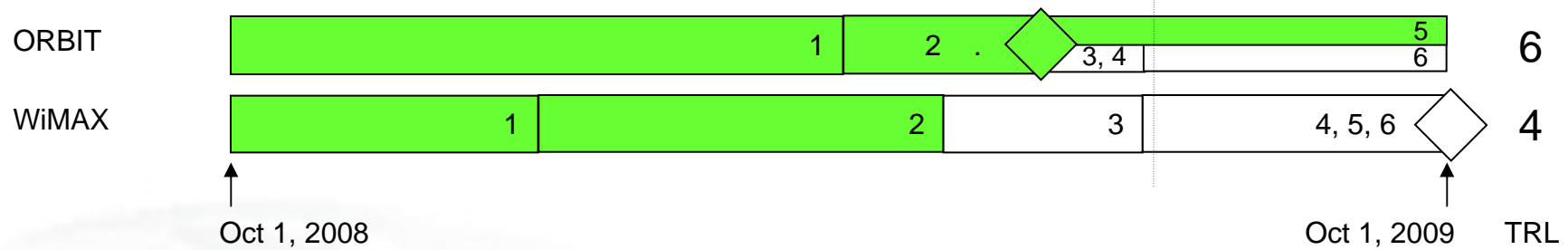
Cluster Strengths

- Control framework leverages ORBIT
- Well-developed ideas on instrumentation and experiment workflow
- Strong WiMax expansion potential

Cluster Concerns

- Wireless only—can it grow to control multiple technologies?
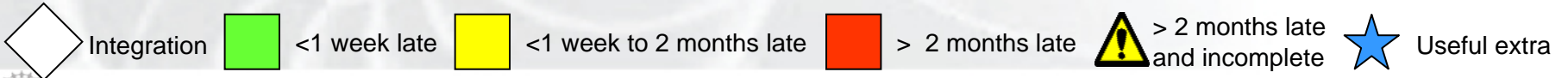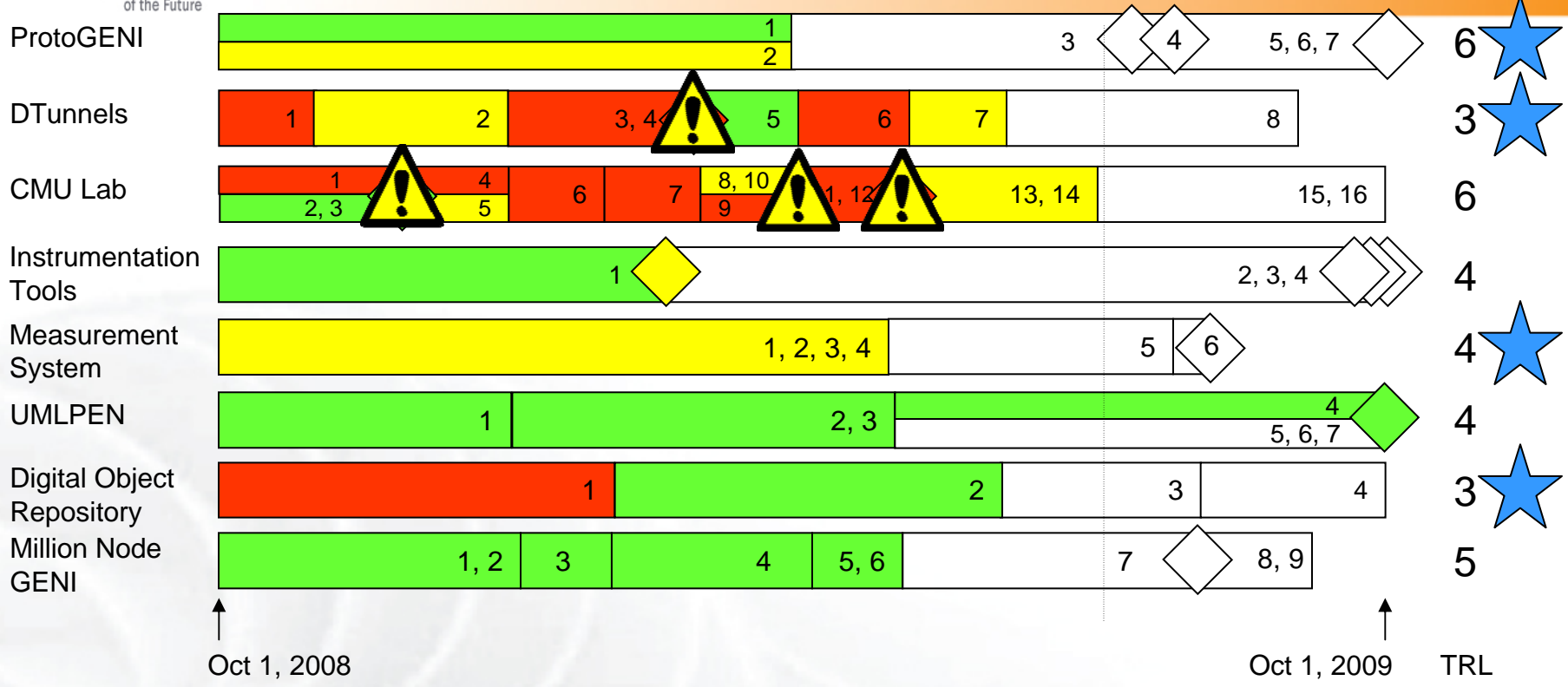- Must expand number of non-WINLAB projects in cluster

◇ Integration   🟩 <1 week late   🟨 <1 week to 2 months late   🟥 > 2 months late   ⚠ > 2 months late and incomplete   ⭐ Useful extra

![geni - Exploring Networks of the Future]

PlanetLab	1 [yellow] / 2, 3, 4 [red] / 5, 6, 7 / 8, 9	6
Enterprise GENI	1, 2 [red] / 3, 4, 6 [yellow] / 5, 7, 8	4
Gush	1 / 2, 3 / 4 [green]	6 ★
Provisioning Service (Raven)	1, 2, 3 [green] / 4, 5, 6	6 ★
MAX	1, 2 [green] / 3 [red] ⚠ / 4 [yellow] / 5, 6	5
GpENI	1, 2 [green] / 3, 4	4
Internet Scale Overlay Hosting	1 [green] / 2, 3 / 4, 5, 6	4 ★

Oct 1, 2008   Oct 1, 2009   TRL

Cluster Strengths

- Control framework leverages PlanetLab
- Some industrial interest in PlanetLab and OpenFlow

Cluster Concerns

- Insufficient communication within cluster
- Control framework focused on IP hosts; unclear plans for expansion
- Unclear how dynamic network topologies, wireless, etc., will integrate
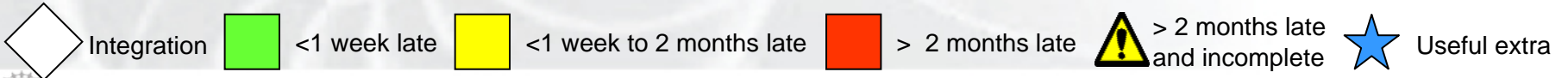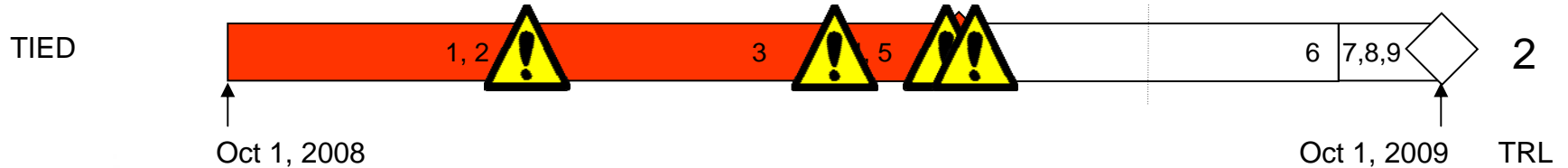
◇ Integration   ▮ [green] <1 week late   ▮ [yellow] <1 week to 2 months late   ▮ [red] > 2 months late   ⚠ > 2 months late and incomplete   ★ Useful extra

Cluster Strengths

- Control framework leverages Emulab
- Good cooperation within cluster
- Control framework supports compute nodes and network topologies
- Demonstrated inter-aggregate node + network slices
- Attracting 'pick one' projects to cluster (DOR, PEN)

Cluster Concerns
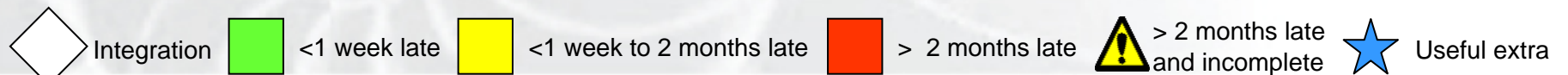
- Potential for staff overload with newly added projects

Legend: Integration | <1 week late | <1 week to 2 months late | > 2 months late | > 2 months late and incomplete | Useful extra

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TIED

| | 1, 2 | ⚠️ | 3 | ⚠️ 5 | ⚠️⚠️ | 6 | 7,8,9 | ◇ | 2 |

Oct 1, 2008

Oct 1, 2009   TRL

Cluster Strengths

- Strong ties to the the security research community
- Has a concept for integrating diverse infrastructure and tools

Cluster Concerns
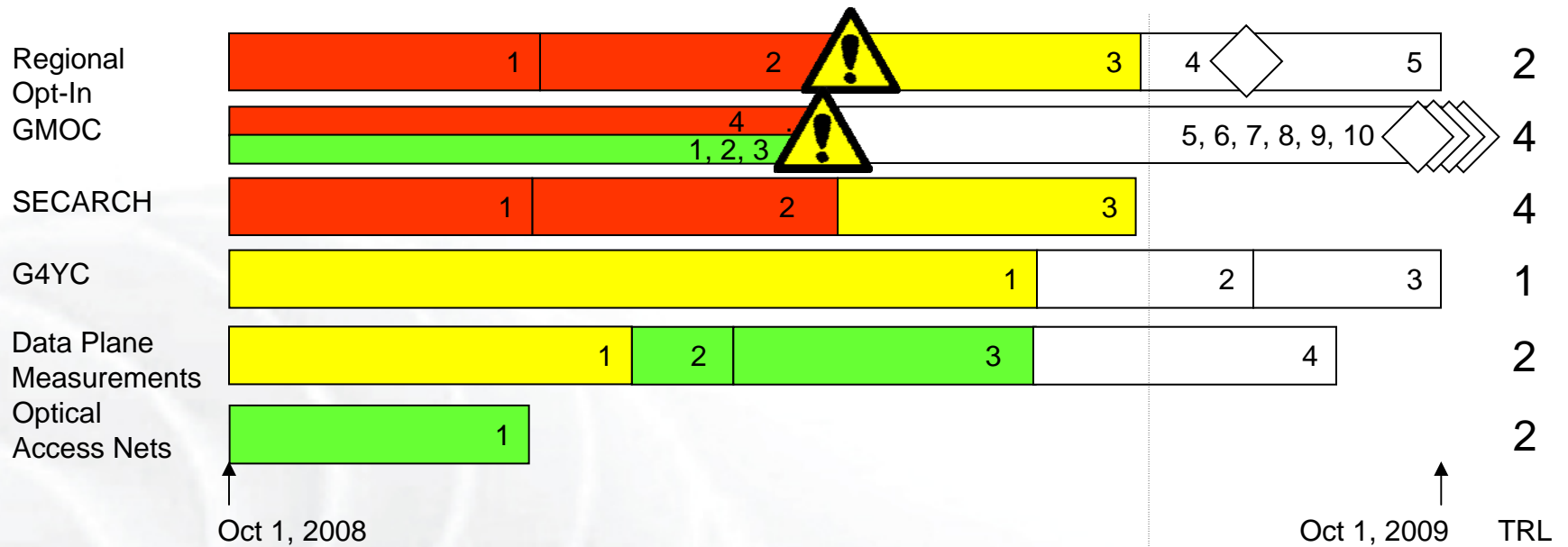
- Minimal reporting, documentation
- Very little visible progress against milestones
- No apparent plans for developing a control framework in Spiral 1
- No extra-cluster GENI collaborations

Note: GPO and TIED have not yet reached a shared understanding of milestone status. Work in progress.

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Non-cluster projects

Regional Opt-In | 1 | 2 | 3 | 4 | 5 | 2

GMOC | 4 | 1, 2, 3 | 5, 6, 7, 8, 9, 10 | 4

SECARCH | 1 | 2 | 3 | 4

G4YC | 1 | 2 | 3 | 1

Data Plane Measurements | 1 | 2 | 3 | 4 | 2

Optical Access Nets | 1 | 2

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TRL

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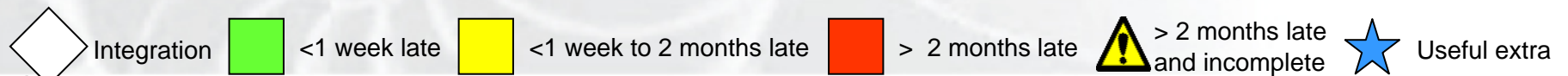
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Oct 1, 2008   Oct 1, 2009   TRL
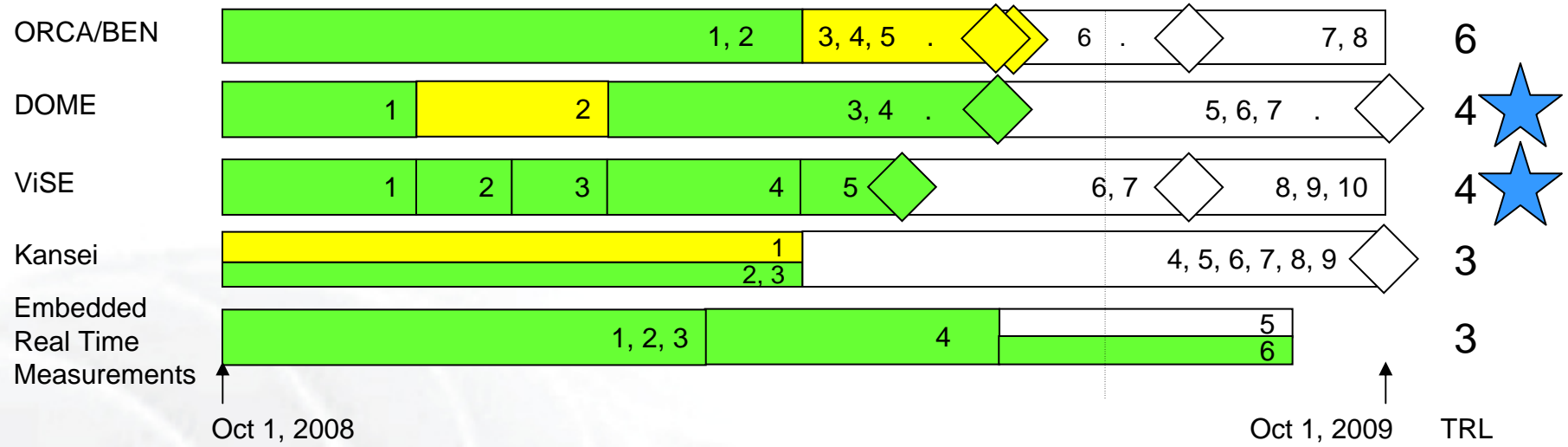
Cluster Strengths

- Good cooperation within cluster
- Control framework supports compute nodes, network topologies, wireless
- Demonstrates inter-aggregate node + network slices
- Potential for interoperability with other clusters (ProtoGENI and ORBIT)
- Ties to GRID community, optical projects

Cluster Concerns

- Immature control framework with little / no existing research user base
- Relying a lot on a few key developers
- End-to-end VLANs will be a challenge for some cluster members

Integration   <1 week late   <1 week to 2 months late   > 2 months late   > 2 months late and incomplete   Useful extra

- **GPO will exercise options for a large majority of projects**, because they appear to be going well
    - Those projects will then receive their Year 2 funding at already-agreed funding levels (or higher)
    - Options will be exercised soon, before end of Spiral 1

- GPO will work with projects that appear to be having difficulty in making progress
    - For projects **recovering sufficiently by the end of Spiral 1**, GPO will exercise options (perhaps at a reduced level)

Comments and feedback