ESIP
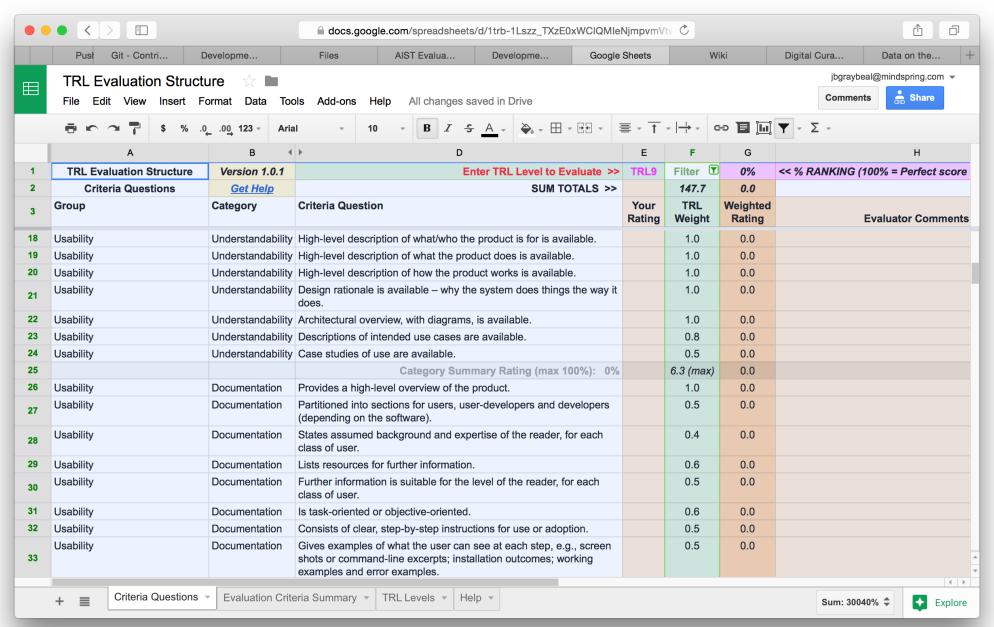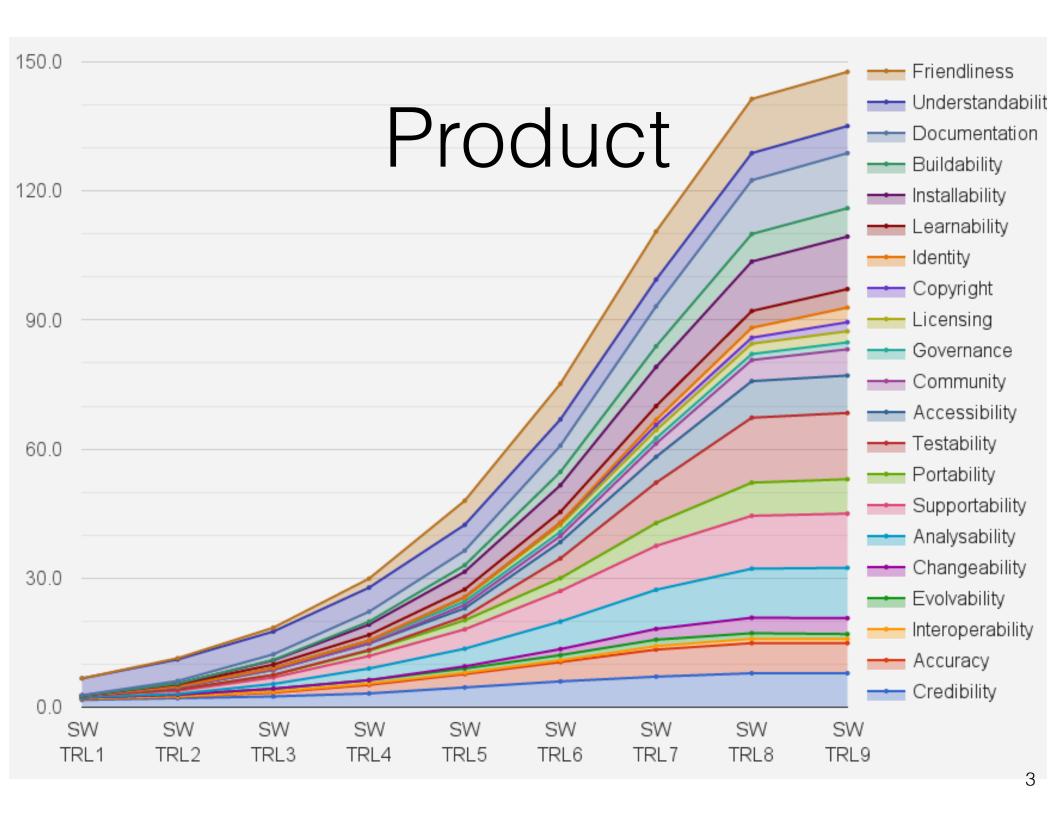# TRL Evaluation Form
Final Recommendations

John Graybeal
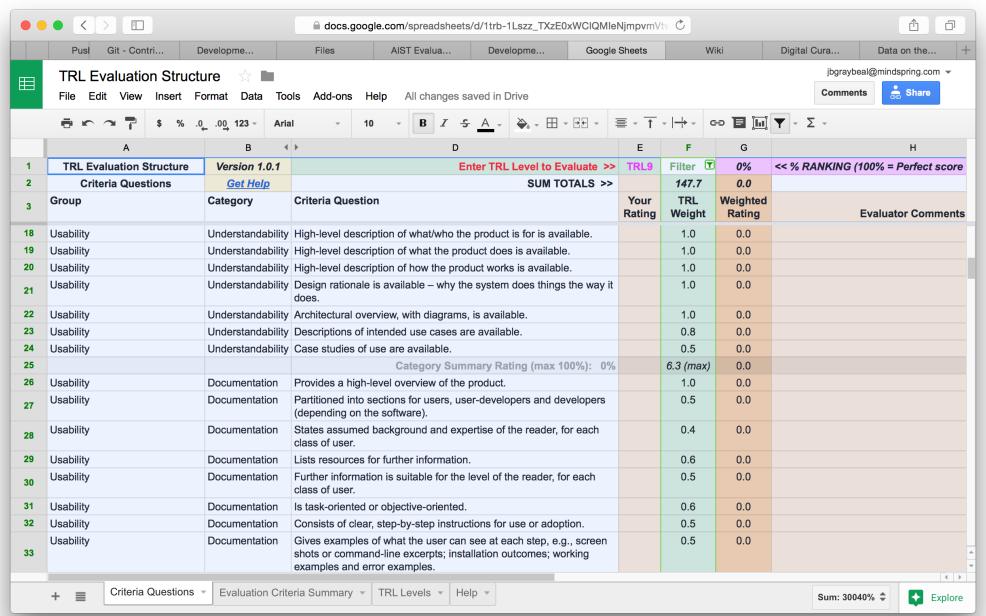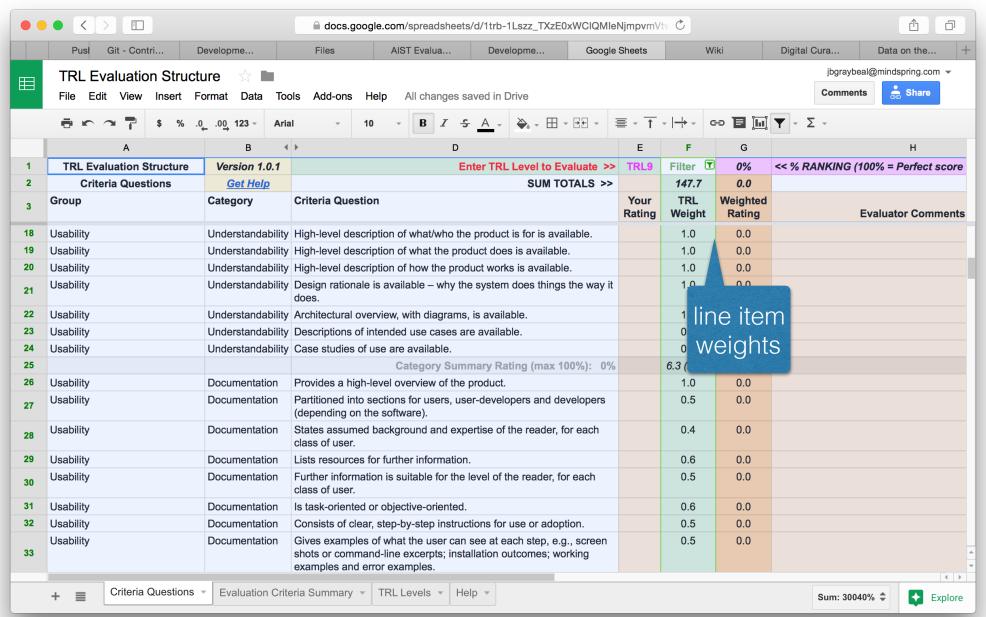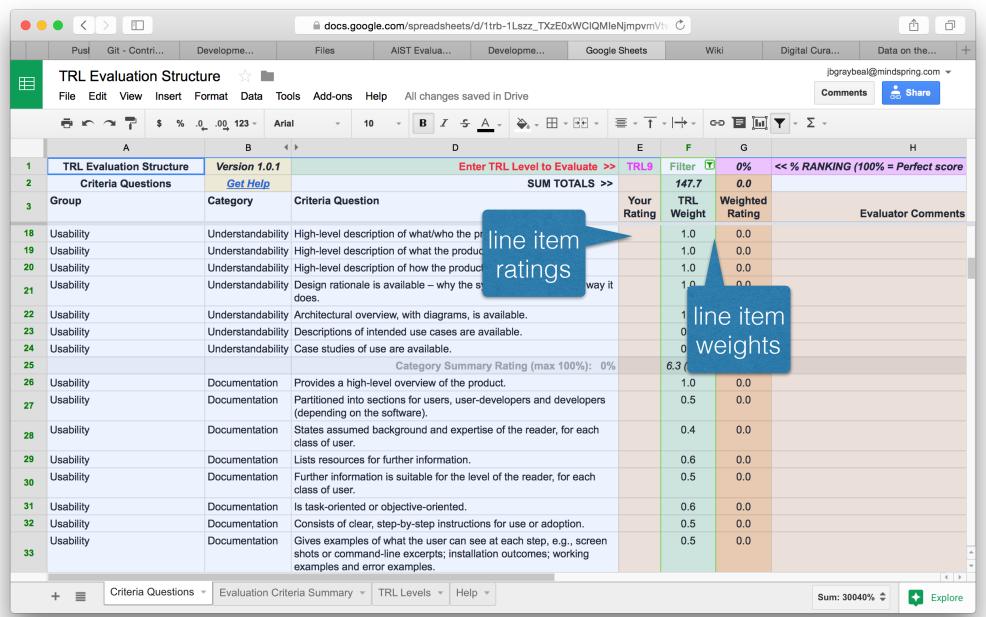Graybeal.SKI Consulting

for

ESIP Federation
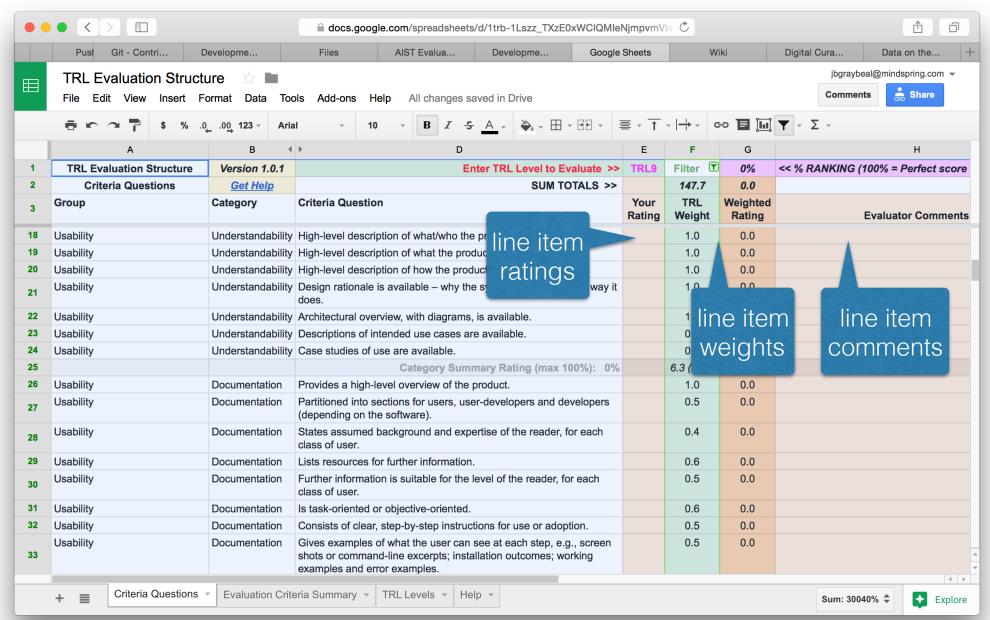Products and Services Committee

Special Thanks: Erin & Annie

Product

	Group	Category	Criteria Question	Your Rating	TRL Weight	Weighted Rating	Evaluator Comments
	TRL Evaluation Structure	Version 1.0.1	Enter TRL Level to Evaluate >>	TRL9	Filter	0%	<< % RANKING (100% = Perfect score
	Criteria Questions	Get Help	SUM TOTALS >>		147.7	0.0	
18	Usability	Understandability	High-level description of what/who the product is for is available.		1.0	0.0	
19	Usability	Understandability	High-level description of what the product does is available.		1.0	0.0	
20	Usability	Understandability	High-level description of how the product works is available.		1.0	0.0	
21	Usability	Understandability	Design rationale is available – why the system does things the way it does.		1.0	0.0	
22	Usability	Understandability	Architectural overview, with diagrams, is available.		1.0	0.0	
23	Usability	Understandability	Descriptions of intended use cases are available.		0.8	0.0	
24	Usability	Understandability	Case studies of use are available.		0.5	0.0	
25			Category Summary Rating (max 100%): 0%		6.3 (max)	0.0	
26	Usability	Documentation	Provides a high-level overview of the product.		1.0	0.0	
27	Usability	Documentation	Partitioned into sections for users, user-developers and developers (depending on the software).		0.5	0.0	
28	Usability	Documentation	States assumed background and expertise of the reader, for each class of user.		0.4	0.0	
29	Usability	Documentation	Lists resources for further information.		0.6	0.0	
30	Usability	Documentation	Further information is suitable for the level of the reader, for each class of user.		0.5	0.0	
31	Usability	Documentation	Is task-oriented or objective-oriented.		0.6	0.0	
32	Usability	Documentation	Consists of clear, step-by-step instructions for use or adoption.		0.5	0.0	
33	Usability	Documentation	Gives examples of what the user can see at each step, e.g., screen shots or command-line excerpts; installation outcomes; working examples and error examples.		0.5	0.0	

2

Product

Product

Product

	A	B	D	E	F	G	H
1	**TRL Evaluation Structure**	*Version 1.0.1*	**Enter TRL Level to Evaluate >>**	**TRL9**	Filter	0%	**<< % RANKING (100% = Perfect score**
2	**Criteria Questions**	*Get Help*	**SUM TOTALS >>**		*147.7*	*0.0*	
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18	Usability	Understandability	High-level description of what/who the product is for is available.		1.0	0.0	
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24	Usability	Understandability	Case studies of use are available.				
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line item weights

Criteria Questions · Evaluation Criteria Summary · TRL Levels · Help

Sum: 30040%

4

Product

Product

4

Product

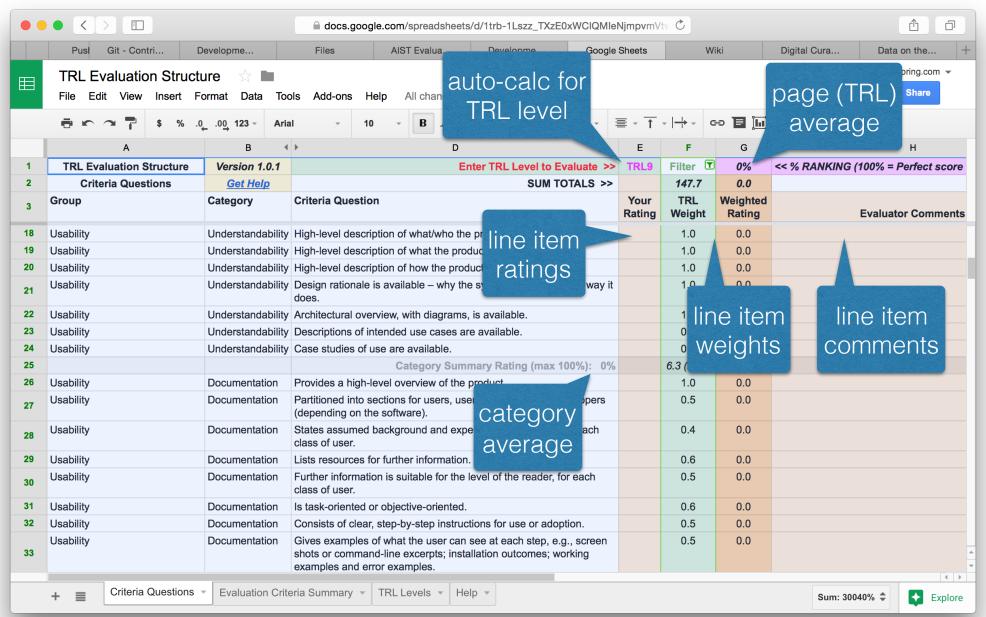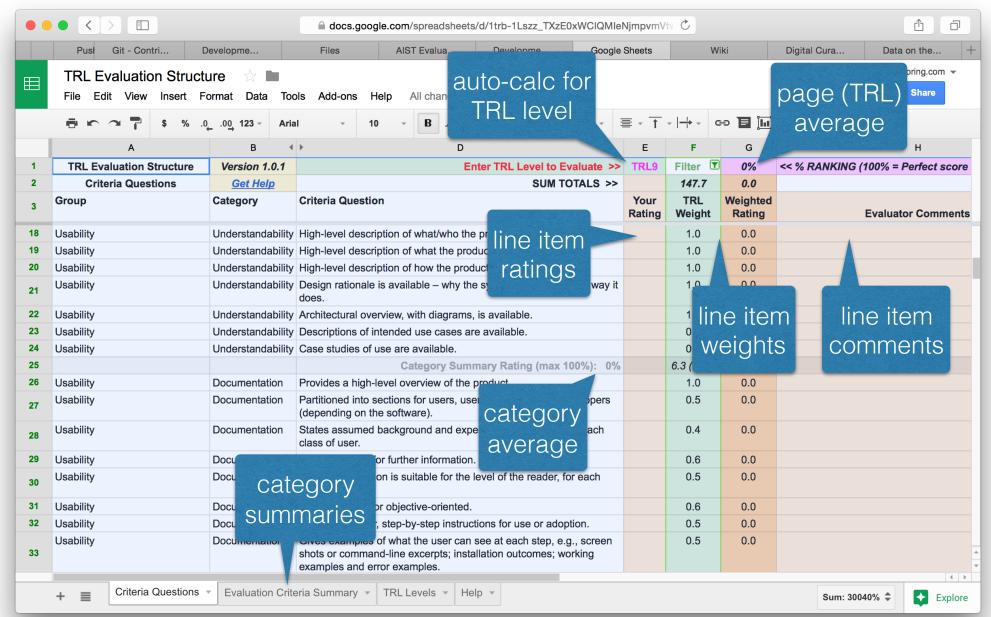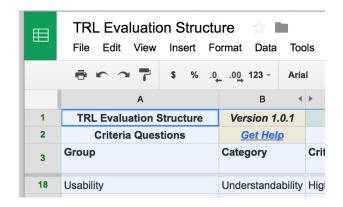# Product

Product

Product

Product Features

- item ratings: binary (0/1), normalized (0.0 to 1.0), or positive value (>0.0)

- TRL-dependent line item weightings

- category summaries

- page and category averages

- line item and instance-wide comments

- instant re-calculation for different TRL levels

Recommendations

General: Product

- Identifier/summary metadata for each instance

- User documentation: local to form? include sources

- Developer documentation: create and reference

- Minor usability issues:

  - lock code to prevent user overwrite

  - auto-update based on TRL changes

General: Process

- Leverage opportunities for customization!
  - Customer: evaluation manager has the ball
  - ESIP: evaluate customization process

- Let project experts pre-enter technical information

- Save all completed customizations and instances
  - Find unimportant or uncompleted criteria

- Minor usability: lock fixed cells, TRL -> autoupdate

General: Maintenance

- Improve processes for version control
  - Track/document template changes over time
  - Track/document changes for an evaluation cycle
- System development over time
  - For now, keep evaluation template to 1 document
  - In long term, may be best converted to software

Software Evaluation

- Timeliness: Update to reflect current practices

- Checklist size: Keep detail, but add 'short form'

- Validation: Evaluate criteria against other standards

- Software classes: Customize for each class?
  - *Desktop apps*, *web services*, *infrastructures*

Other Evaluation Types

- Status: Re-weighted existing criteria for these artifacts

- Data Sets: harder to capture mix of types, opinions

  - Metadata guidelines could dominate criteria

  - Recommend: Finding existing checklists

- Knowledge Artifacts: hardest to capture

  - Many recent publications on ontology evaluation

  - Recommend: Wait for specific evaluation request

- Overall: ESIP teams as knowledge aggregators?

Potential Applications

- providing a basis for discussing project evaluation or deliverable requirements with clients

- creating project readiness/progress evaluation criteria for managers

- tracking a project's lifetime technology readiness levels

- providing long-term aggregation of projects' results

- enabling technology maturity evaluation services

- providing an up-to-date summary of best practices

Technology Evaluation Framework Conclusions

- The TEF has been an extremely useful prototype.

- The TEF has many existing and future applications.

- TEF needs improving, especially as usage grows.

% Category Weight at Each TRL

(Cumulative Values)

Total Category Weight at Each TRL

Legend:
- Friendliness
- Understandability
- Documentation
- Buildability
- Installability
- Learnability
- Identity
- Copyright
- Licensing
- Governance
- Community
- Accessibility
- Testability
- Portability
- Supportability
- Analysability
- Changeability
- Evolvability
- Interoperability
- Accuracy
- Credibility