



Inspections Data Analysis and Inspection Dashboard Tool

“Full Life-cycle Defect Management”
SAS Conference, Executive Briefing

By

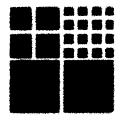
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Problem We Are Addressing

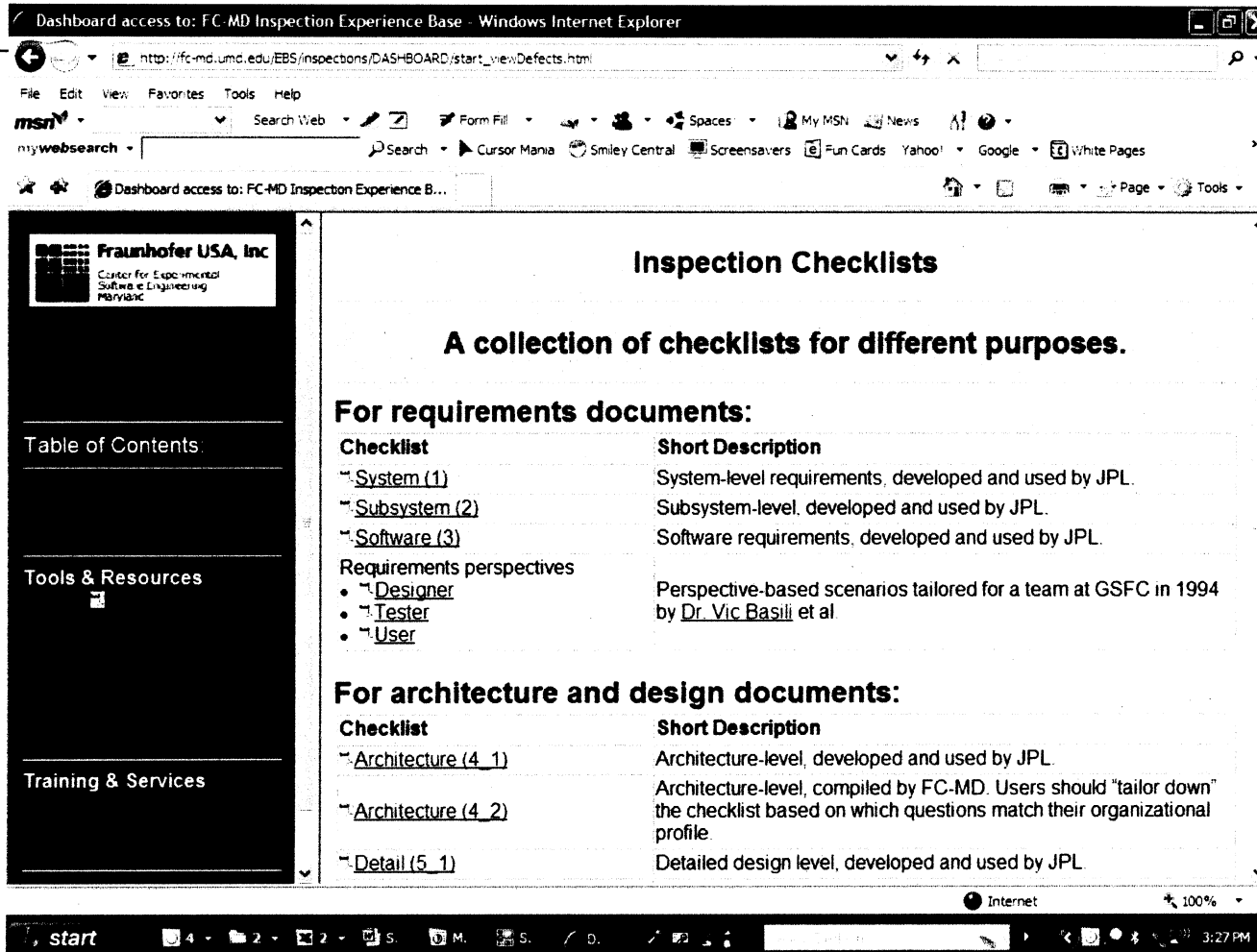
- We are studying
 - Parameters that affect the results of inspection
 - The relation between V&V effectiveness in early lifecycle (e.g. inspection) and late (testing)
- We are using this information to provide feedback and decision support to NASA projects, on questions such as:
 - *If I choose to apply inspections, what are the implications for the effort required to be spent on other non-optional activities, like system testing?*
 - *Can I make an informed decision about what type or how many inspection or testing activities to apply, based on the expected defect profile of a project?*



Initial Approach: Baseline analyses and “Inspection Dashboard” tool

- Model-building & analysis of inspection factors
 - Using data from multiple projects & Centers
- Encapsulating results in a prototype tool that
 - Leverages inspection models
 - Provides feedback on metrics from new inspections
 - Provides insight for comparing results with
 - ❖ Recommended values (from literature)
 - ❖ Norms at the Agency / Center / Project
 - Allows “what ifs” and help in planning

Example of Experience Base



Dashboard access to: FC-MD Inspection Experience Base - Windows Internet Explorer

http://fc-md.umd.edu/EBS/inspections/DASHBOARD/start_viewDefects.html

File Edit View Favorites Tools Help

msn Search Web Form Fill Spaces My MSN News

mywebsearch Search Cursor Mania Smiley Central Screensavers Fun Cards Yahoo! Google White Pages

Dashboard access to: FC-MD Inspection Experience B...

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Inspection Checklists

A collection of checklists for different purposes.

For requirements documents:

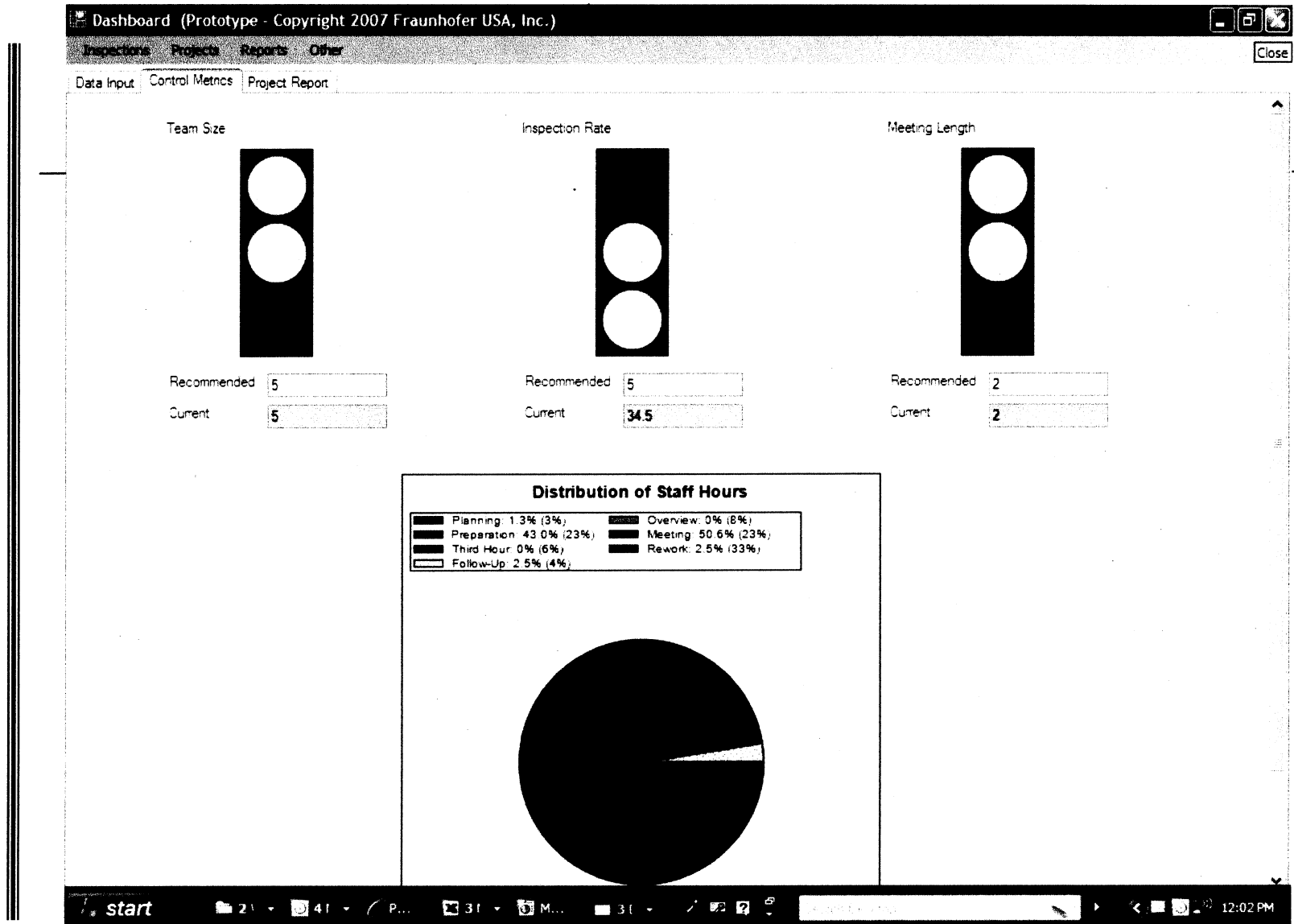
Checklist	Short Description
System (1)	System-level requirements, developed and used by JPL.
Subsystem (2)	Subsystem-level, developed and used by JPL.
Software (3)	Software requirements, developed and used by JPL.
Requirements perspectives	
• Designer	Perspective-based scenarios tailored for a team at GSFC in 1994 by Dr. Vic Basili et al.
• Tester	
• User	

For architecture and design documents:

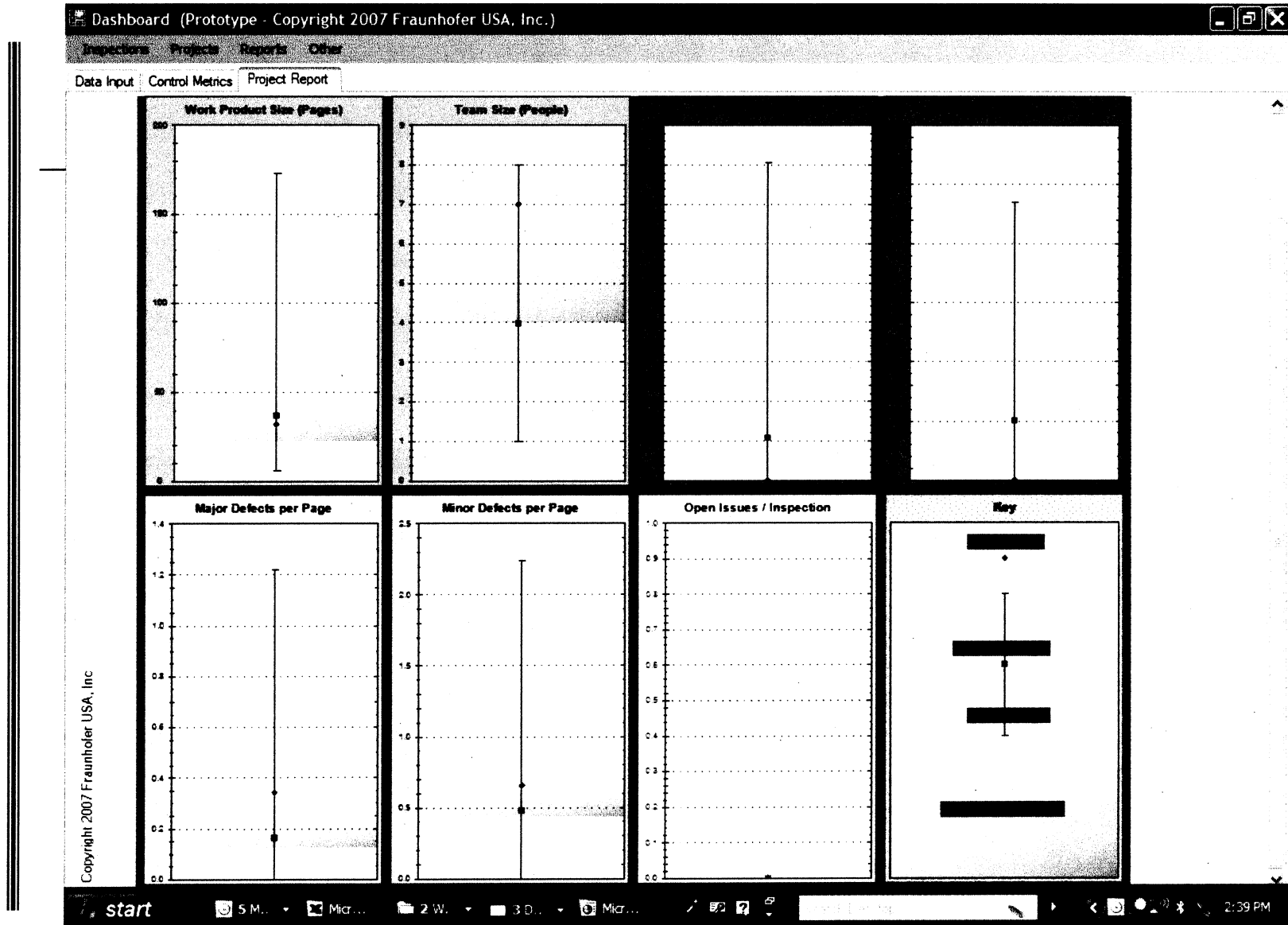
Checklist	Short Description
Architecture (4_1)	Architecture-level, developed and used by JPL.
Architecture (4_2)	Architecture-level, compiled by FC-MD. Users should "tailor down" the checklist based on which questions match their organizational profile.
Detail (5_1)	Detailed design level, developed and used by JPL.

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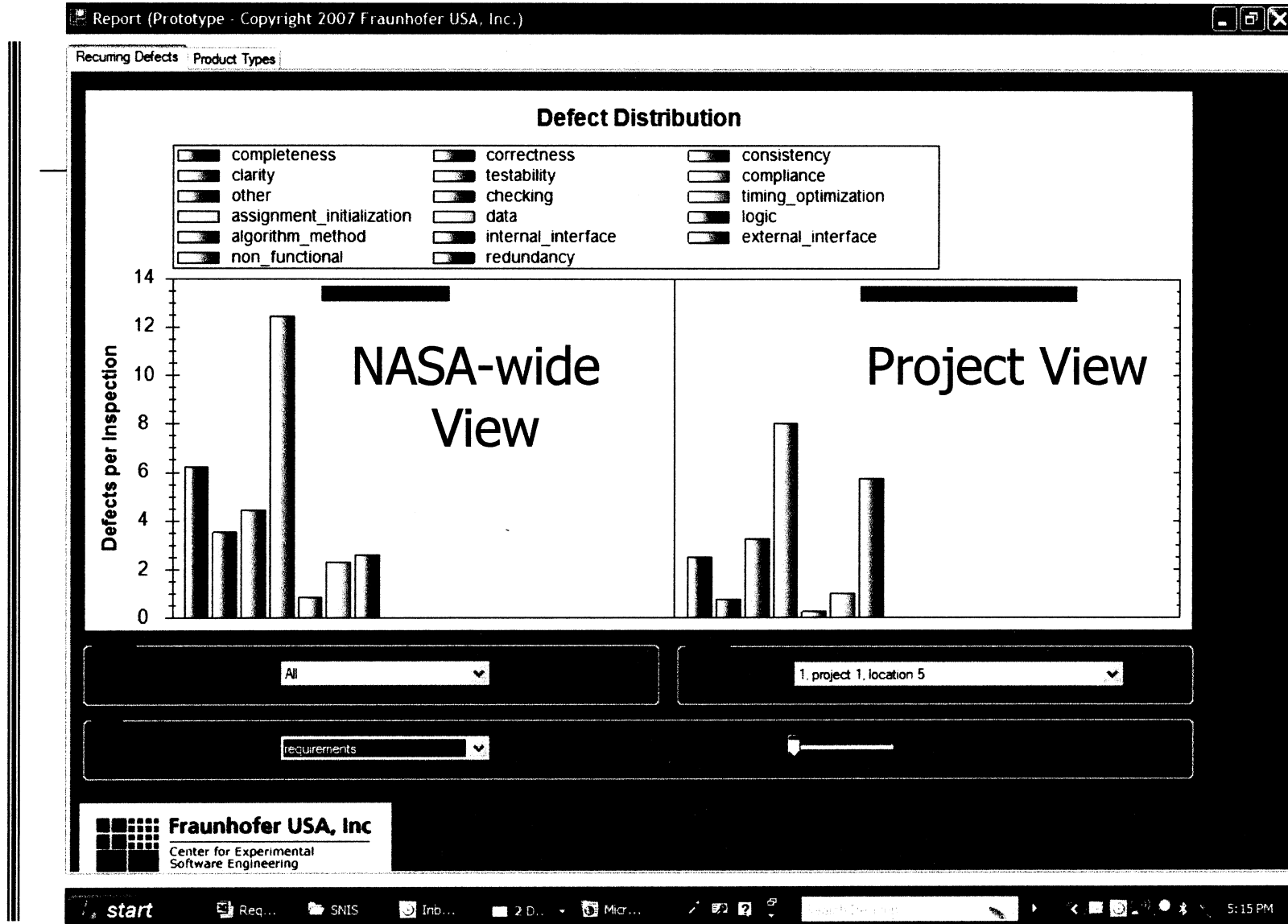
Control Metrics

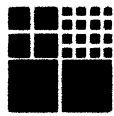


Inspection Parameter Comparison



Defect Distribution Comparison





Next Steps

- We're working on...
 - Reconciling data from different sources
 - Refining the model – more sophisticated analyses based on project characteristics
 - Comparison of results from inspection and testing
 - Refining the Inspection Dashboard Prototype
- We need
 - Feedback on reports / analyses
 - Inspection data from additional domains
- This is a work in progress
- If you have suggestions that would make the tool and models more useful, let us know!

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