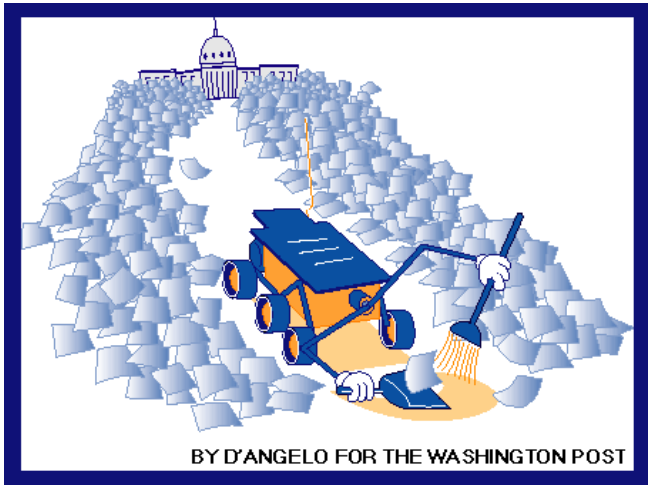
NASA Hardware Management Using Process Libraries and Electronic Handbooks

(Where Shakespeare Meets Freud)

Summary



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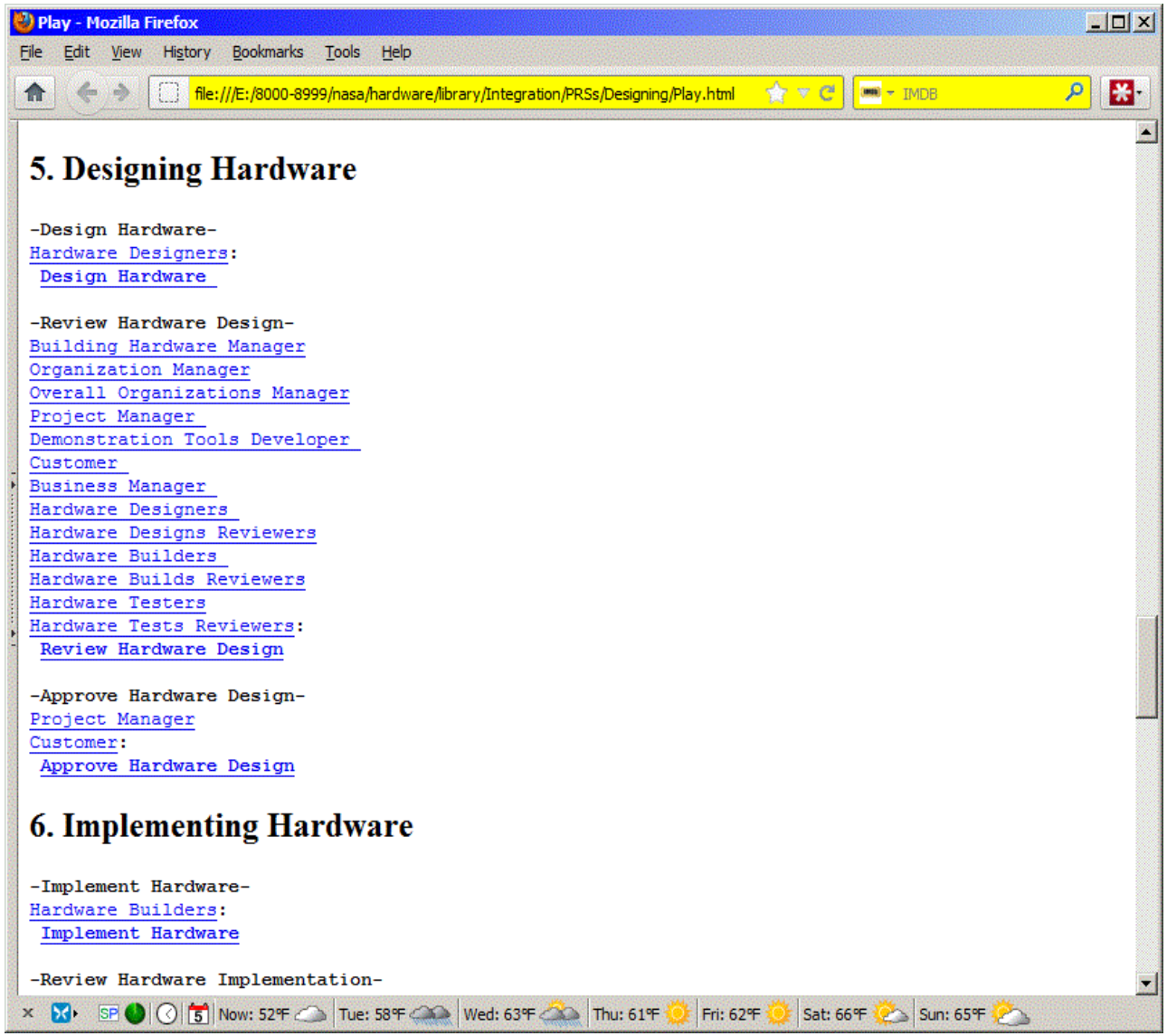
The Bottom Line:

We believe that to truly understand one's universe, one must see it thru multiple “eyes” and also have tools to “communicate” these views.

**To do this, we propose editable and cost-saving process documentation “plays”
for process developers and participants
to help them quickly and effectively learn, integrate, test, teach, and work together.**

These “plays” may be added to new or existing systems.

Plays describe subprocess execution.



Benefits:

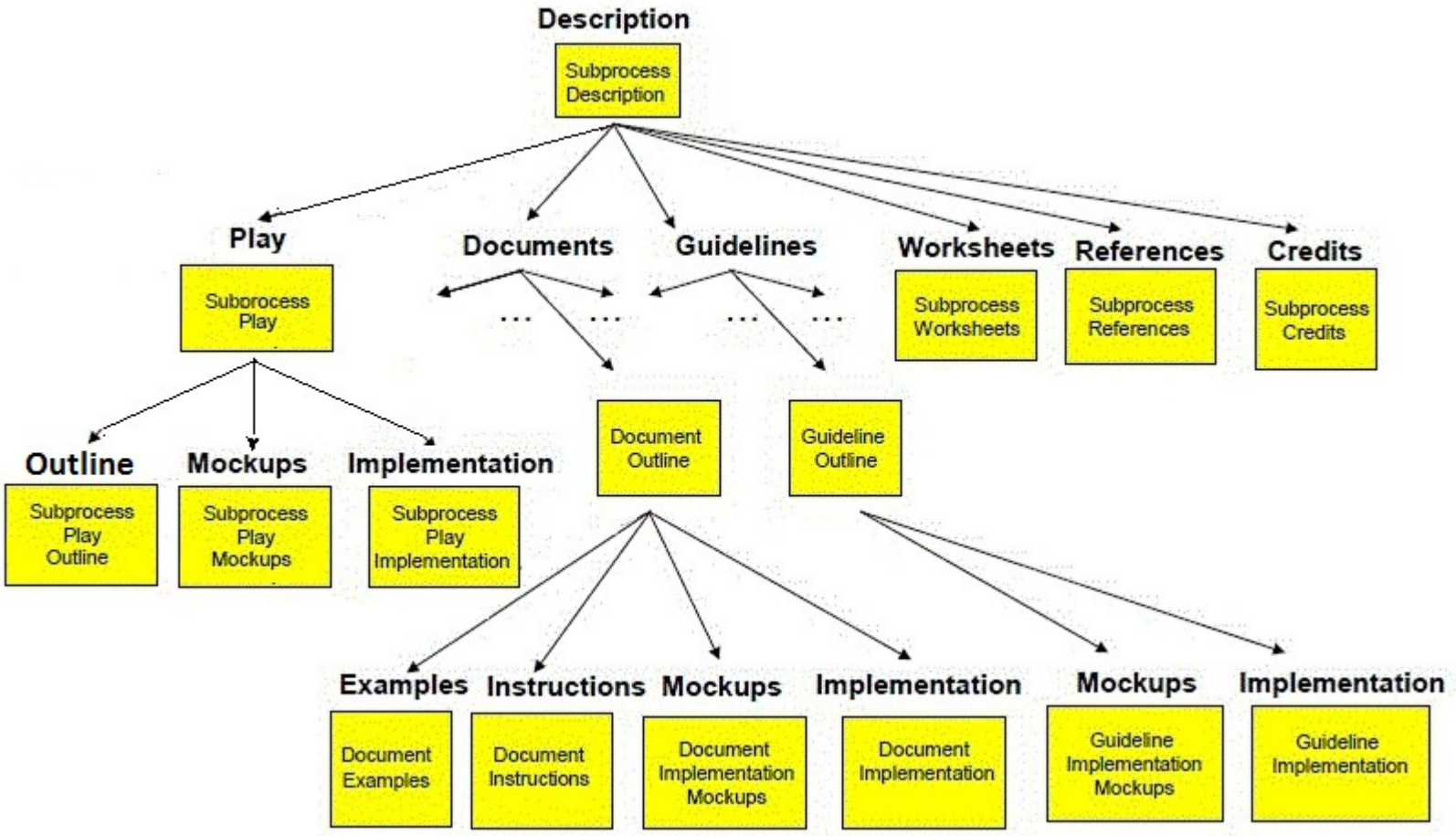
- Facilitates the collection of system and organizational requirements,

- Does not anger/upset people whose opinions are heard,

and

- Increases the interaction between managers, process developers, and participants.

For each subprocess, an “Integration View” is the integration or combination of other subprocess views. An “Integration View” facilitates intra- and inter-organization communication.



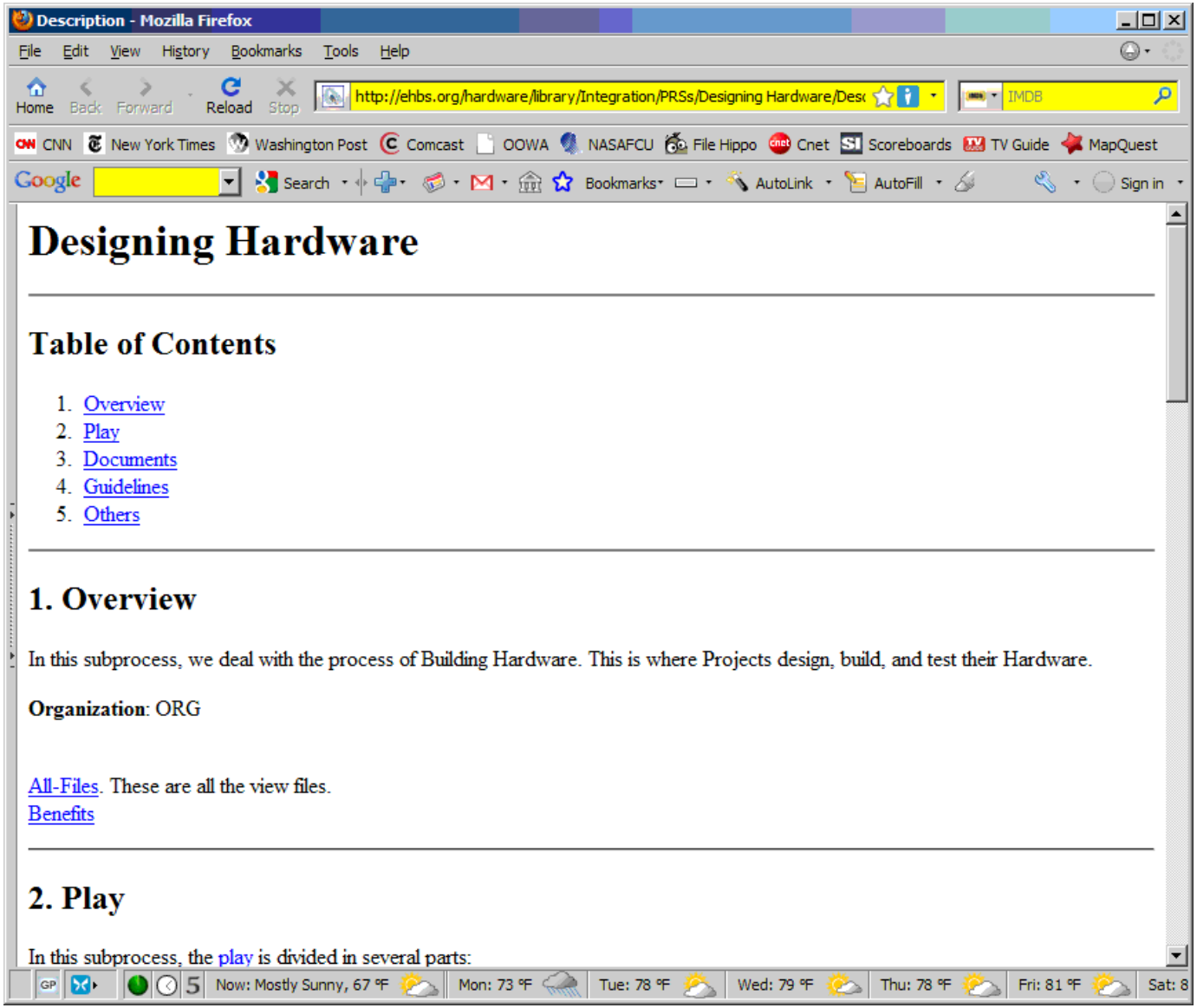
All the world's a stage ...

Jaques:
All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances,
And one man in his time plays many parts,
His acts being seven ages.

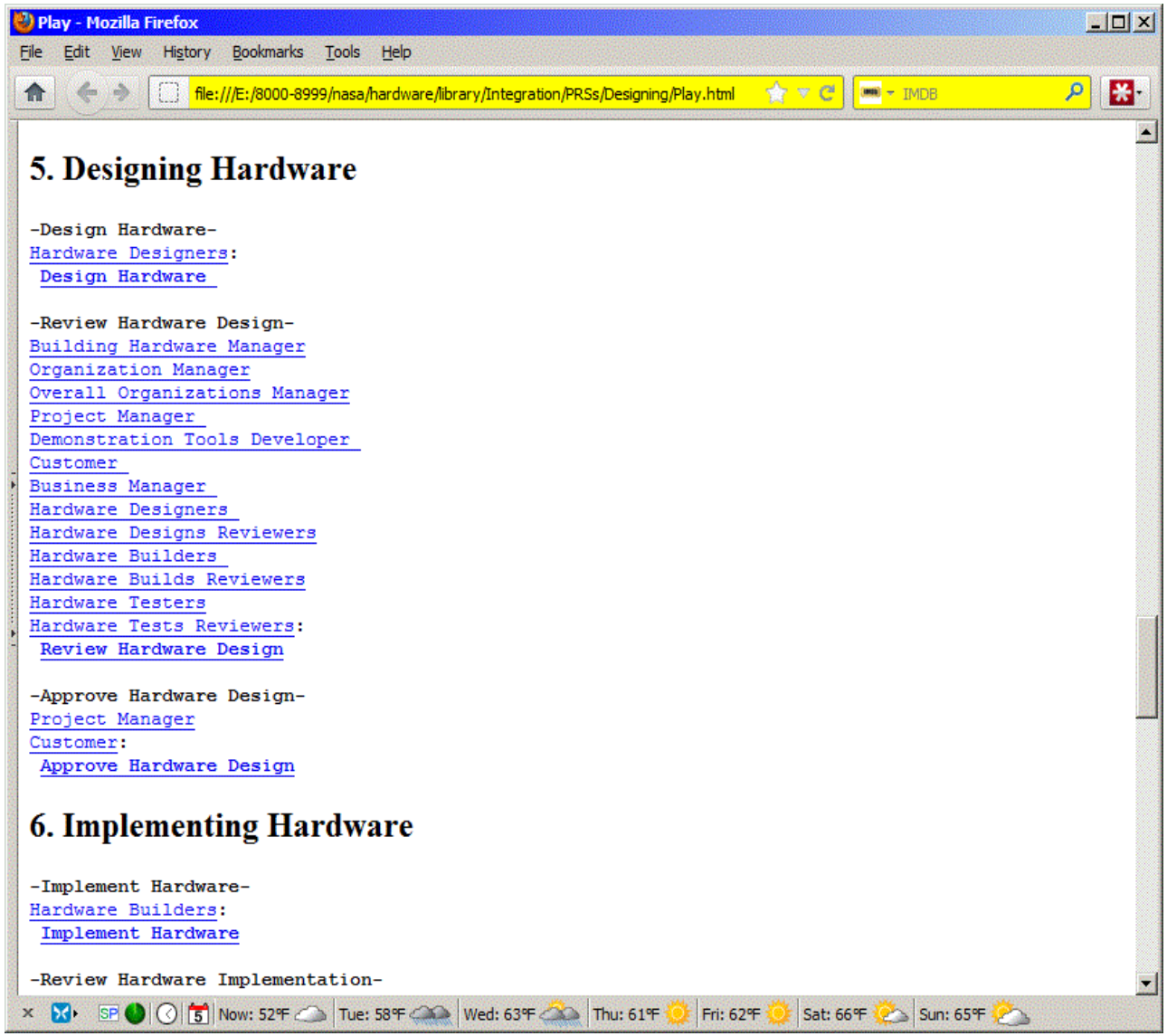
William Shakespeare
As You Like It, Act 2, Scene 7.

The approach uses a modernization of the Socratic Method or Dialogue to gain consensus between Teachers, Documentors, Managers, Implementors, and Participants.

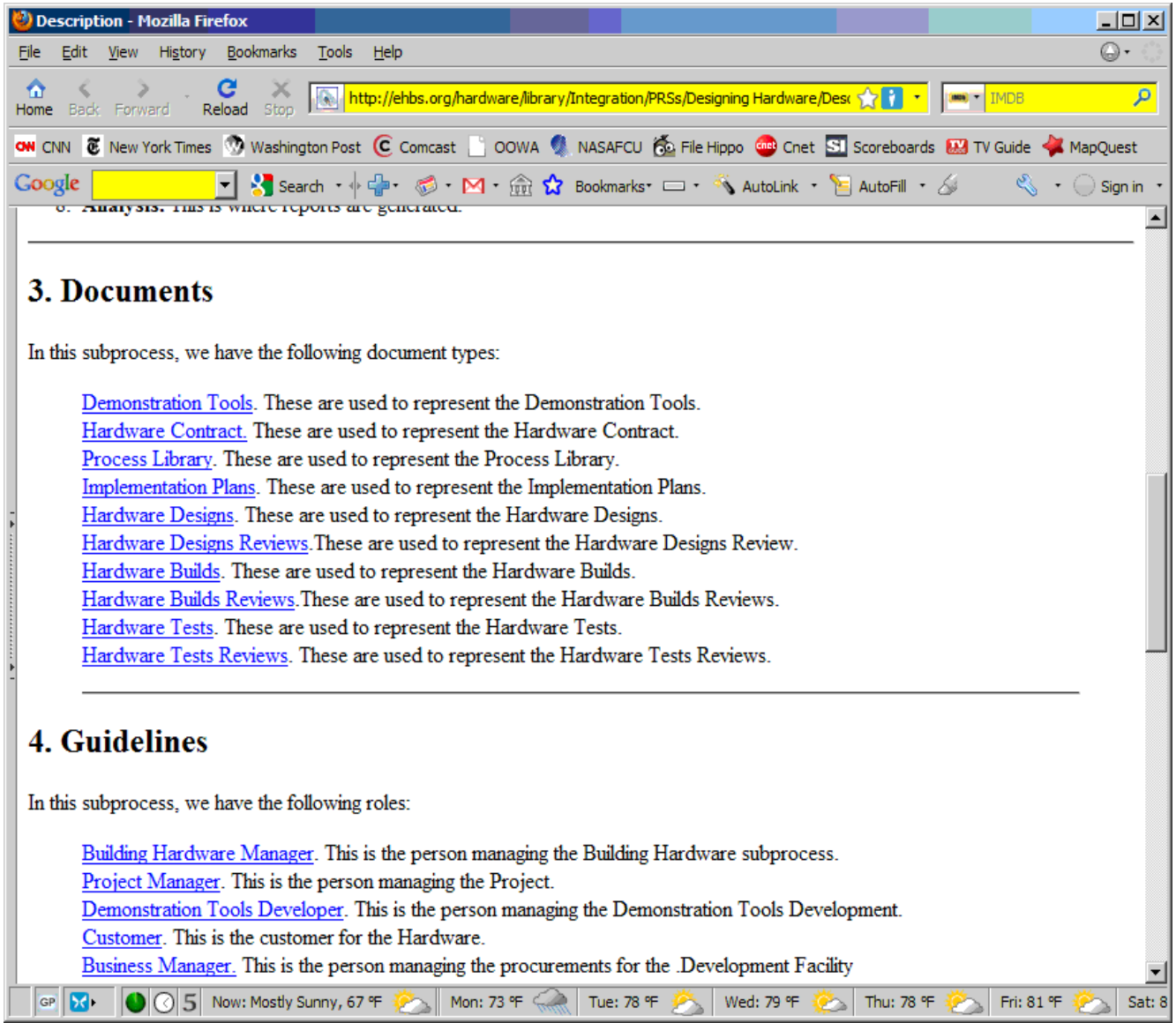
Descriptions summarize subprocesses.



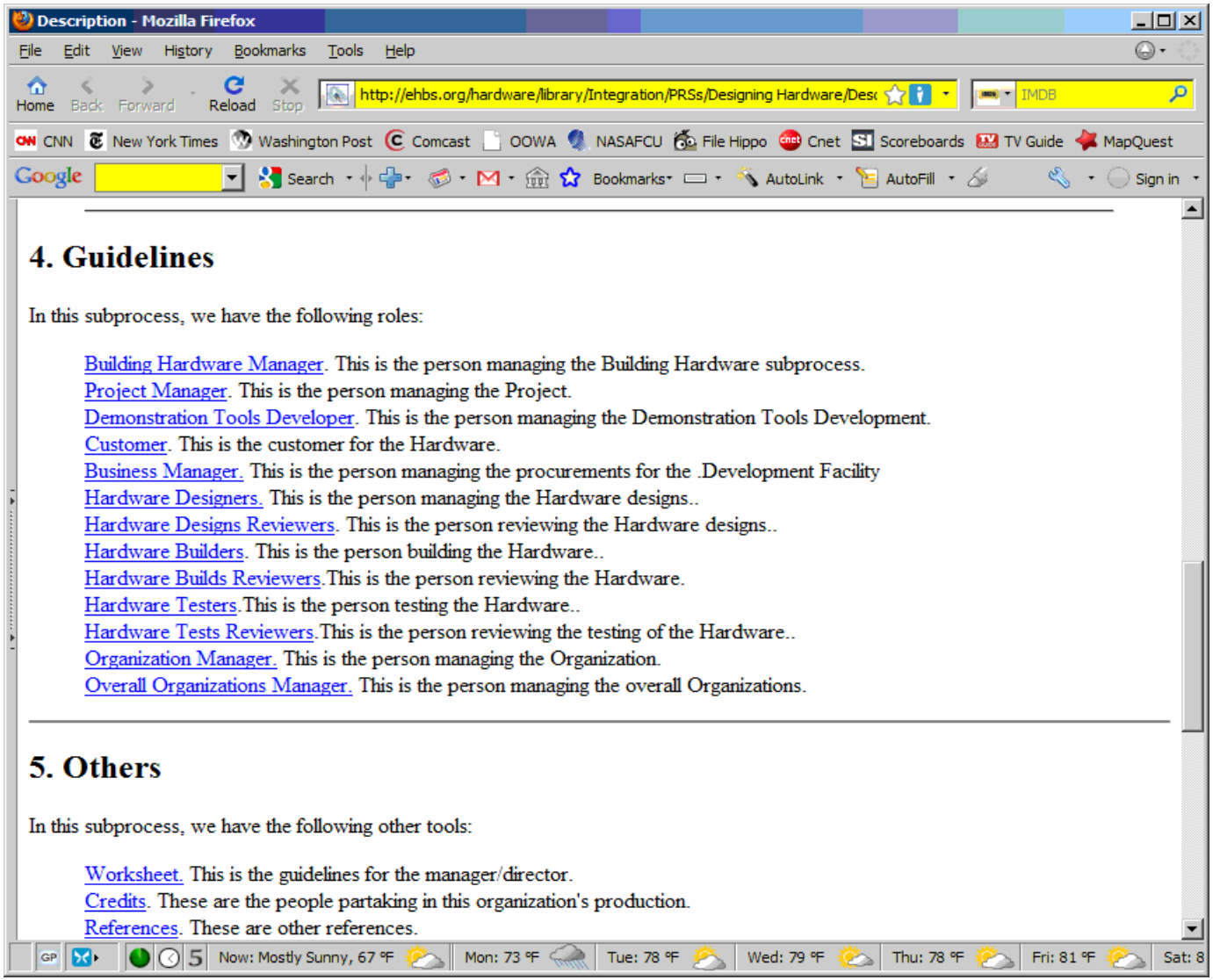
Plays describe subprocess execution.



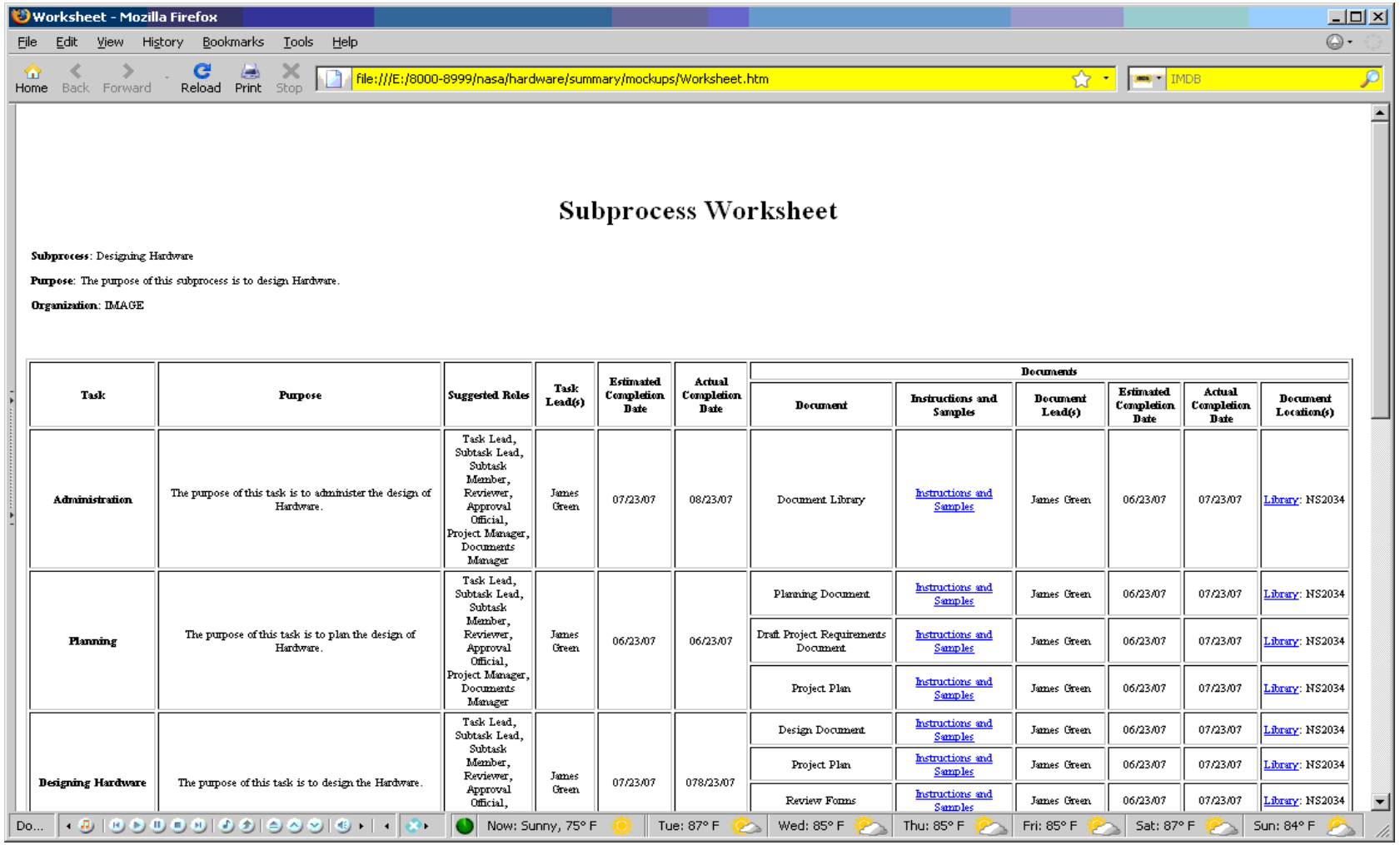
Documents describe subprocess data.



Guidelines describe user subprocesses.



Subprocess Worksheets facilitate subprocess manager communication with process developers and participants.



Subprocess Worksheet

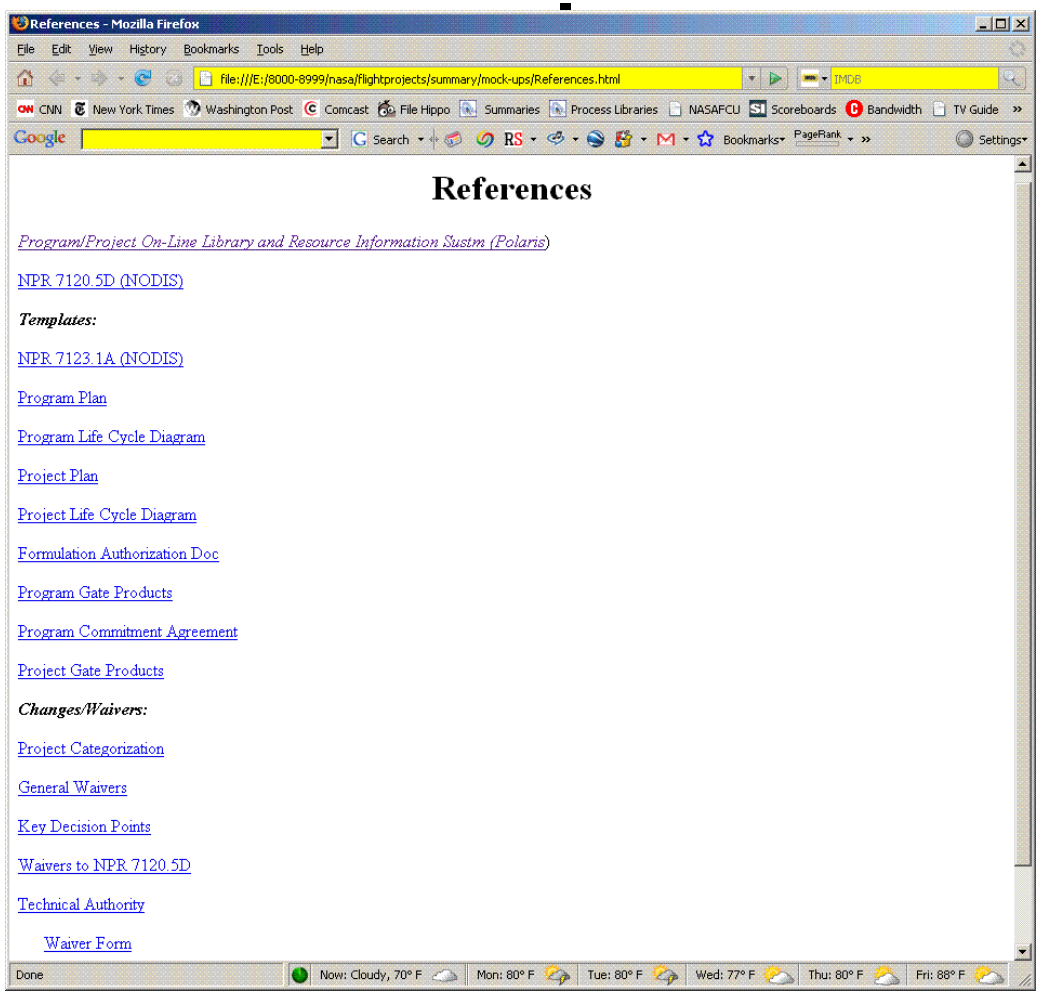
Subprocess: Designing Hardware

Purpose: The purpose of this subprocess is to design Hardware.

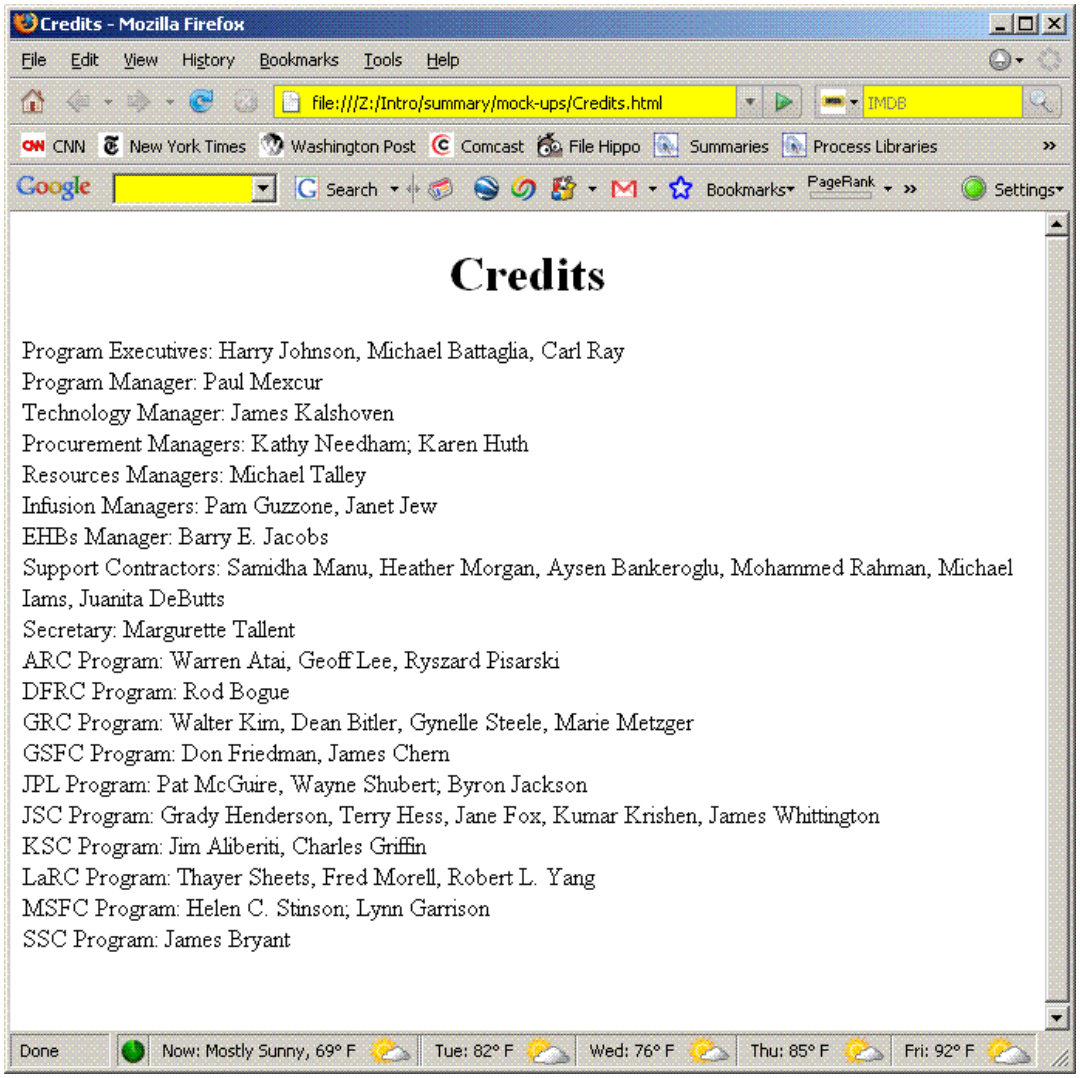
Organization: IMAGE

Task	Purpose	Suggested Roles	Task Lead(s)	Estimated Completion Date	Actual Completion Date	Documents					
						Document	Instructions and Samples	Document Lead(s)	Estimated Completion Date	Actual Completion Date	Document Location(s)
Administration	The purpose of this task is to administer the design of Hardware.	Task Lead, Subtask Lead, Subtask Member, Reviewer, Approval Official, Project Manager, Documents Manager	James Green	07/23/07	08/23/07	Document Library	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
Planning	The purpose of this task is to plan the design of Hardware.	Task Lead, Subtask Lead, Subtask Member, Reviewer, Approval Official, Project Manager, Documents Manager	James Green	06/23/07	06/23/07	Planning Document	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Draft Project Requirements Document	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Project Plan	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
Designing Hardware	The purpose of this task is to design the Hardware.	Task Lead, Subtask Lead, Subtask Member, Reviewer, Approval Official,	James Green	07/23/07	078/23/07	Design Document	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Project Plan	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Review Forms	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034

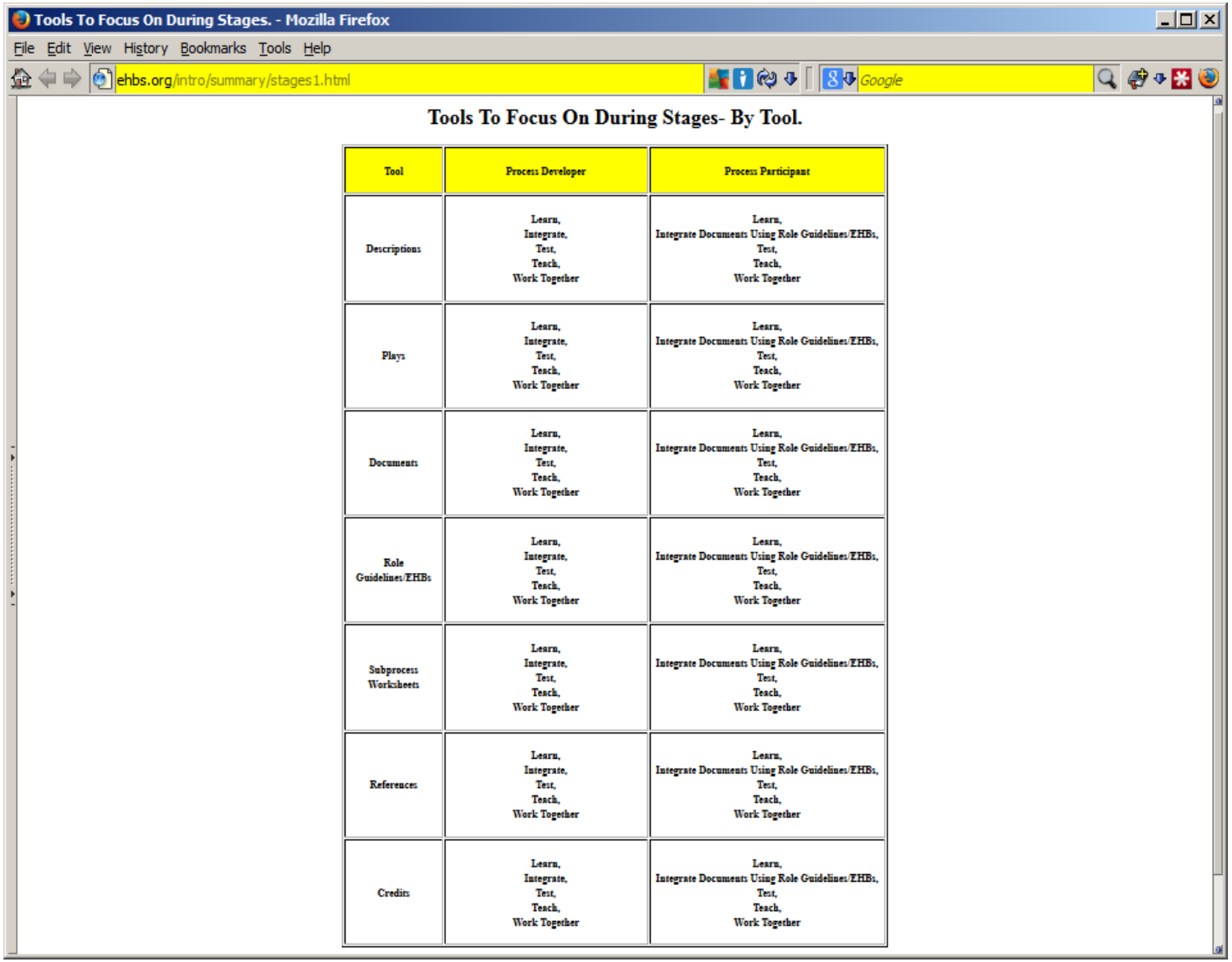
References list other related resources.



Credits acknowledge people's contributions.



Tools that can be focused on during stages- by tool.



Tools To Focus On During Stages- By Tool.

Tool	Process Developer	Process Participant
Descriptions	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
Plays	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
Documents	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
Role Guidelines/EHBs	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
Subprocess Worksheets	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
References	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
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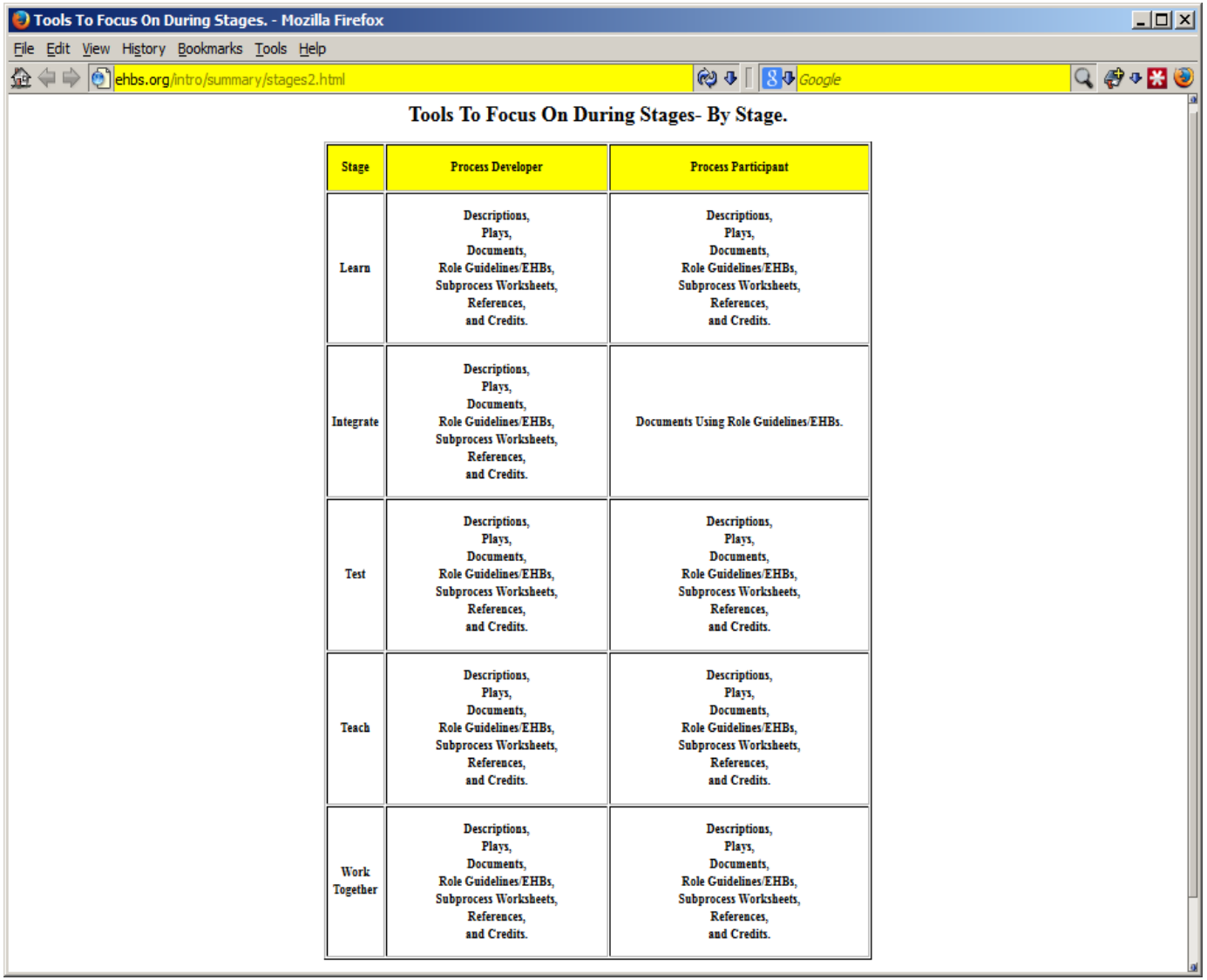
Tools that can be focused on during stages- by stage.



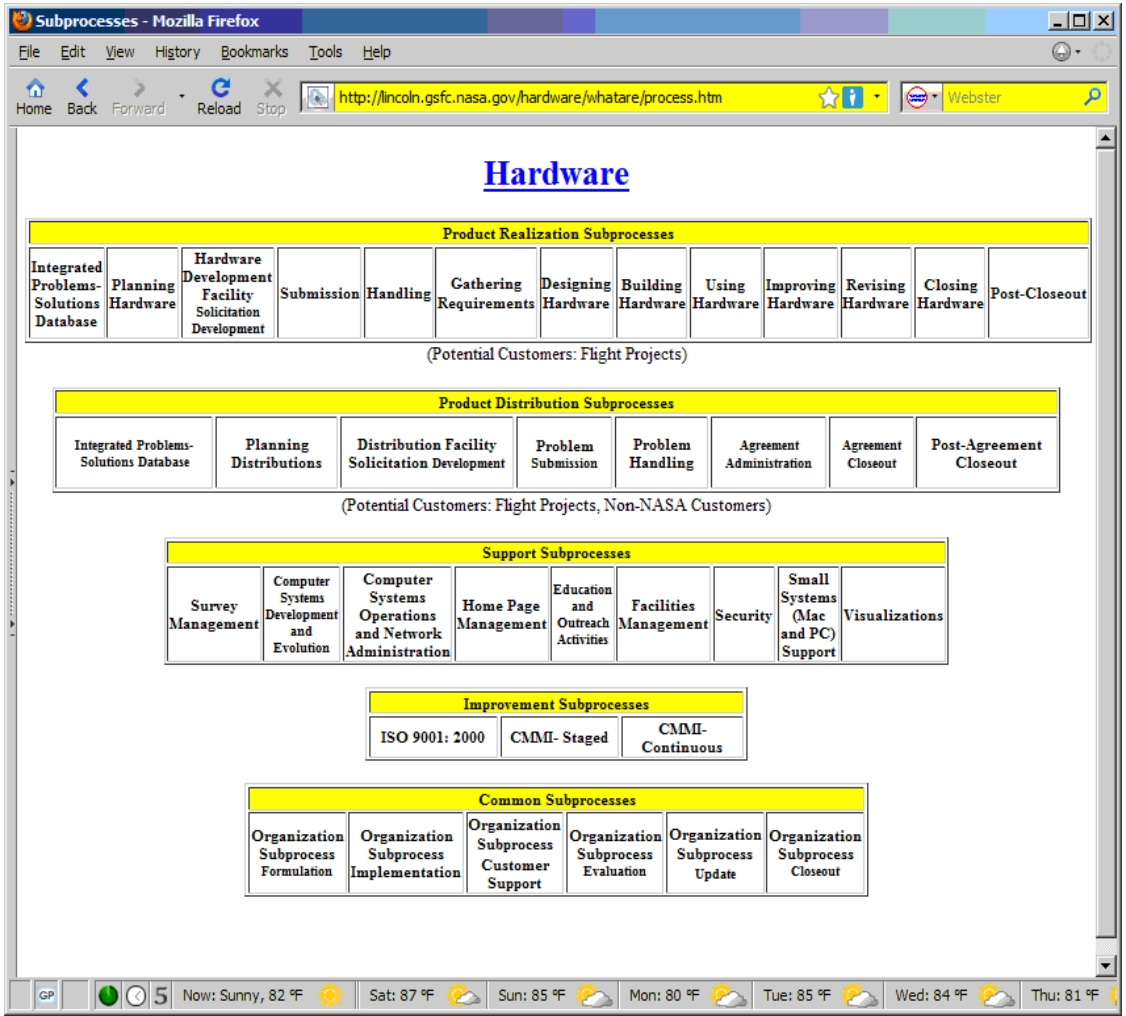
Tools To Focus On During Stages- By Stage.

Stage	Process Developer	Process Participant
Learn	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.
Integrate	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.	Documents Using Role Guidelines/EHBs.
Test	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.
Teach	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.
Work Together	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.	Descriptions, Plays, Documents, Role Guidelines/EHBs, Subprocess Worksheets, References, and Credits.

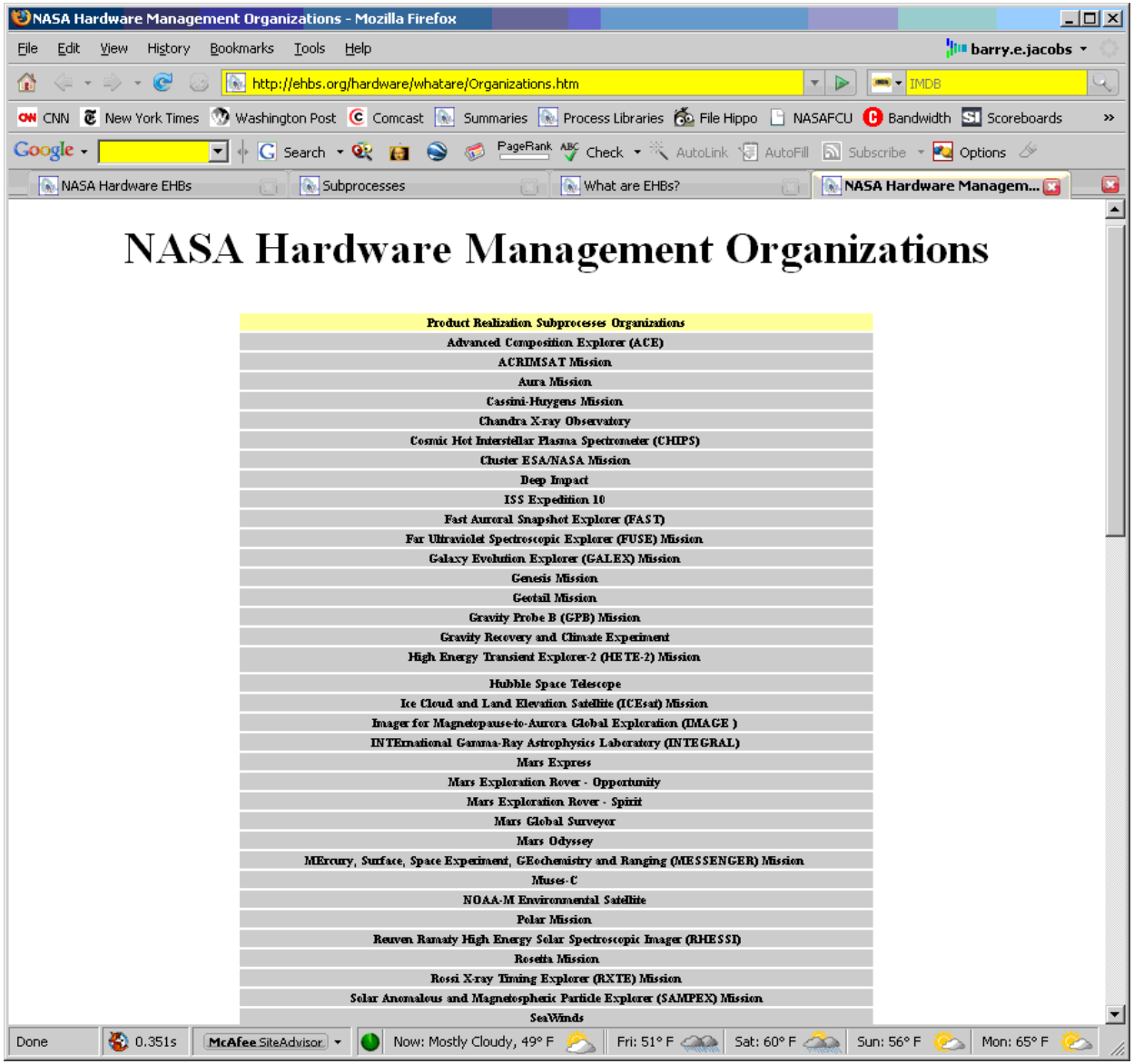
Outline of Presentation:

-The Bottom Line-
-Objectives-
-Solution-
-Where Shakespeare Meets Freud-
-Some Applications-
-Things Supported-
-Examples-
-Final Thoughts-

Objective:
Develop Internet-based tools to support the paperless documentation and management of complex distributed processes.



Organizations provide different views of the subprocesses, some of which may be proprietary.



Organizations execute the eight “Play Development” stages.

1) summarizing (descriptions),

2) playwriting (outlines),

3) staging (mockups),

4) dress rehearsal (implementations),

5) performance (implementations),

6) evaluations (implementations),

7) revisions (outlines, mockups, implementations),

and

8) closing.

People in organizations provide different views of the subprocesses

Subprocess Documentor's View

Subprocess Teacher's, Manager's, Implementor's and Participant's Views

Organizations generate Subprocess Life-Cycle* Views

- **Organization subprocess teachers want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)**
- **Organization subprocess documentors want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)**
- **Organization subprocess managers want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)**
- **Organization subprocess implementors want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)**
- **Organization subprocess participants want to quickly learn, integrate, and perform tasks that are part of their views. (Critical)**
- **Organization subprocess managers want to quickly monitor execution of tasks that are part of their views.**
- **Organization subprocess teachers, documentors, managers, implementors, and participants want to quickly improve, test, and teach their subprocesses.**
- **Organization subprocess teachers, documentors, managers, implementors, and participants want to quickly improve, test, and teach using other organization's views.**
- **Organization subprocess teachers, documentors, managers, implementors, and participants become hurt/angry when their views are not supported.**
- **Organization subprocess implementors want to quickly update, test, and teach tools that help facilitate execution of their subprocesses.**
- **Organization subprocess teachers, documentors, managers, implementors, and participants want to quickly leave when their views continue not to be supported.**

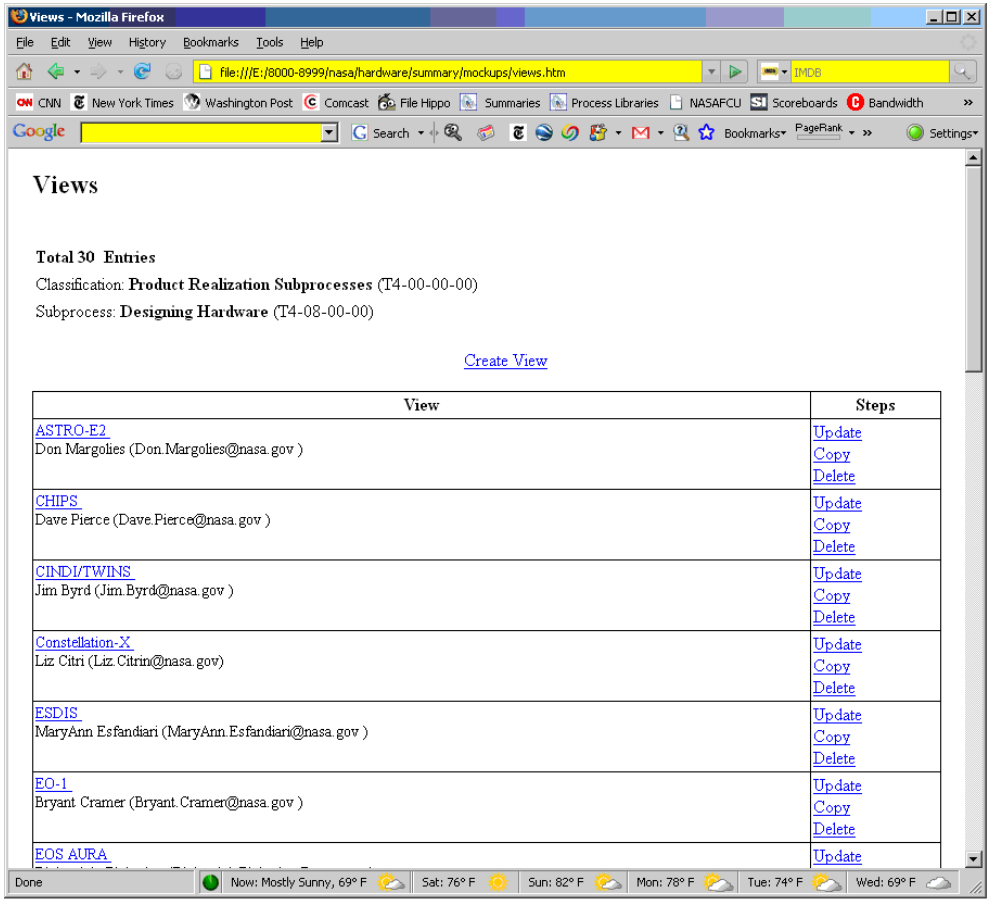
*** Also, called the "Universal Subprocess".**

The "Game of Telephone" Syndrome: Where People Pass-On Only Parts of the "Message"

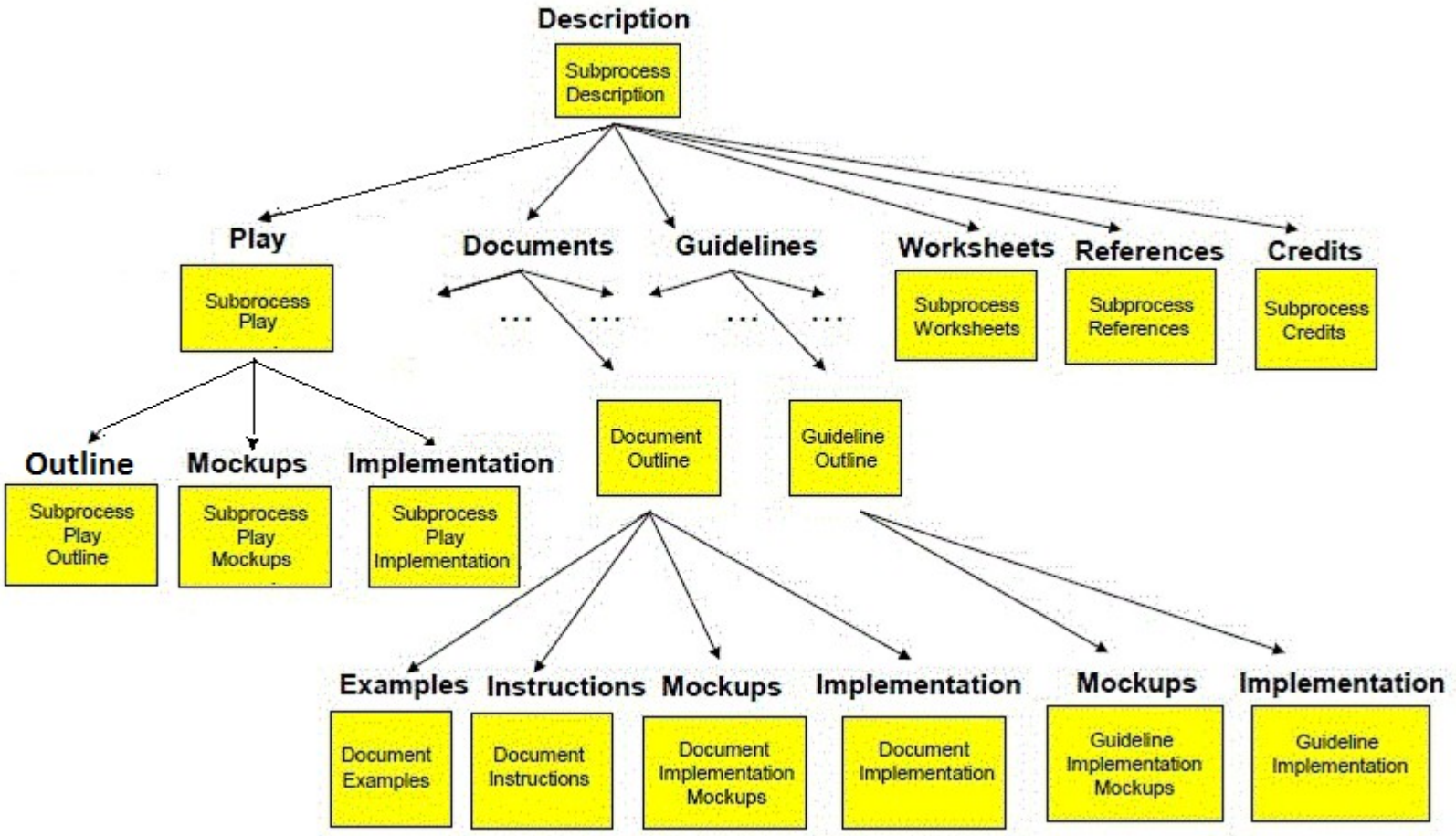
Overview of how editable and cost-saving process documentation tools can solve problems.

Problem	Solution
Develop Internet-based tools to support the paperless documentation and management of complex distributed processes.	Editable process documentation tools can be tailored to each subprocess.
Organizations provide different views of the subprocesses.	Editable process documentation tools can be tailored to reflect different organization's views of the subprocess.
Organizations execute the eight "play development" stages.	Editable process documentation tools can be tailored to reflect the eight "play development" stages.
People in organizations provide different views of the subprocesses.	Editable process documentation tools can be tailored to communicate different people's views of the subprocess.
Organizations generate Subprocess Life-Cycle Views.	Editable process documentation tools can be tailored to reflect different Life-Cycle views of the subprocess.
The "Game of Telephone" Syndrome: Where People Pass-On Only Parts of the "Message".	Editable process documentation tools can be tailored to layer below different people's views of the subprocess.

Solution: Process Libraries maintain organization's views of the subprocesses.



Our basic approach is to wrap organization's subprocesses in a common envelope containing "communication vehicles" that facilitate intra- and inter-organization communication.



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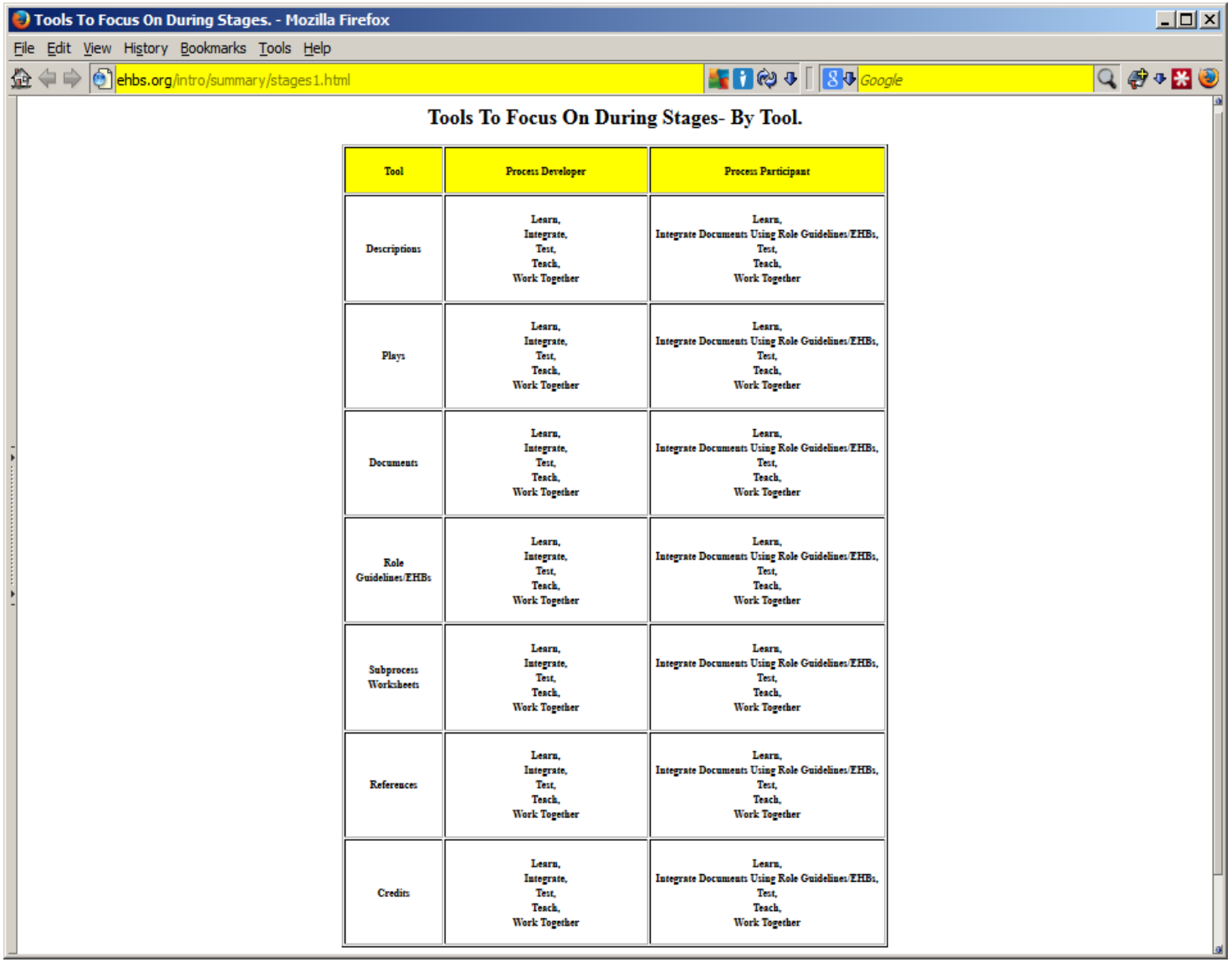

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Subprocess Worksheets	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
References	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together
Credits	Learn, Integrate, Test, Teach, Work Together	Learn, Integrate Documents Using Role Guidelines/EHBs, Test, Teach, Work Together

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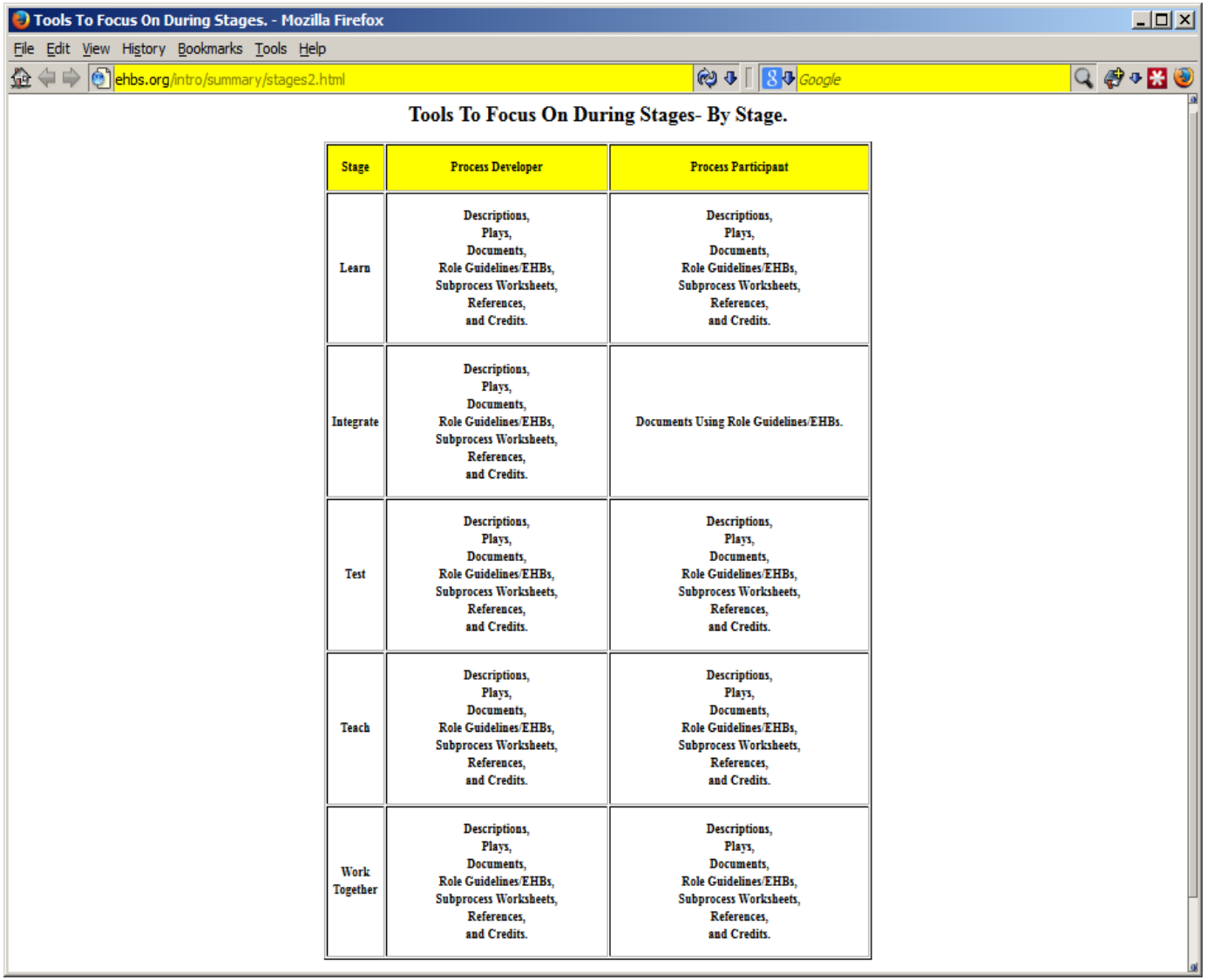

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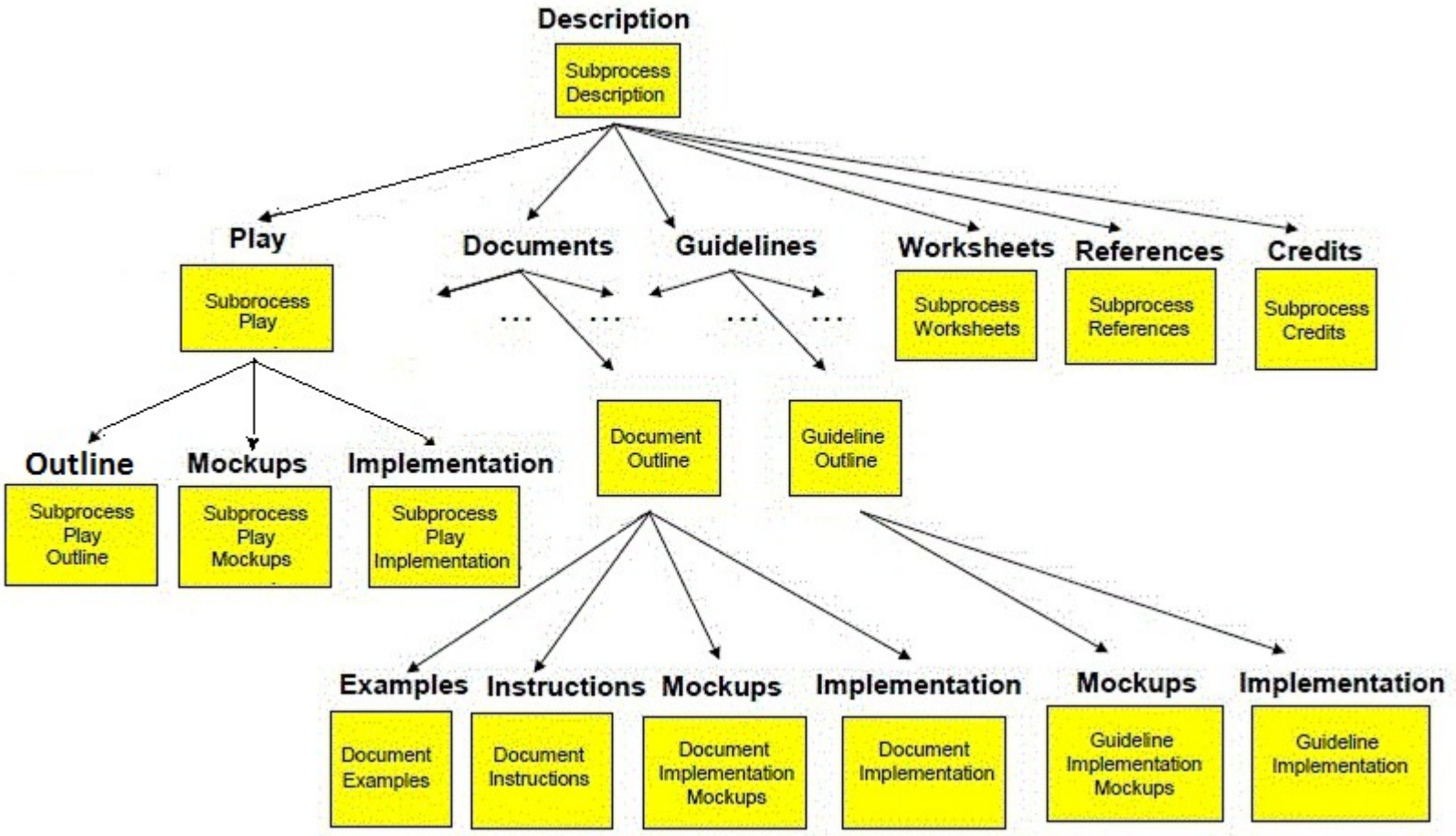
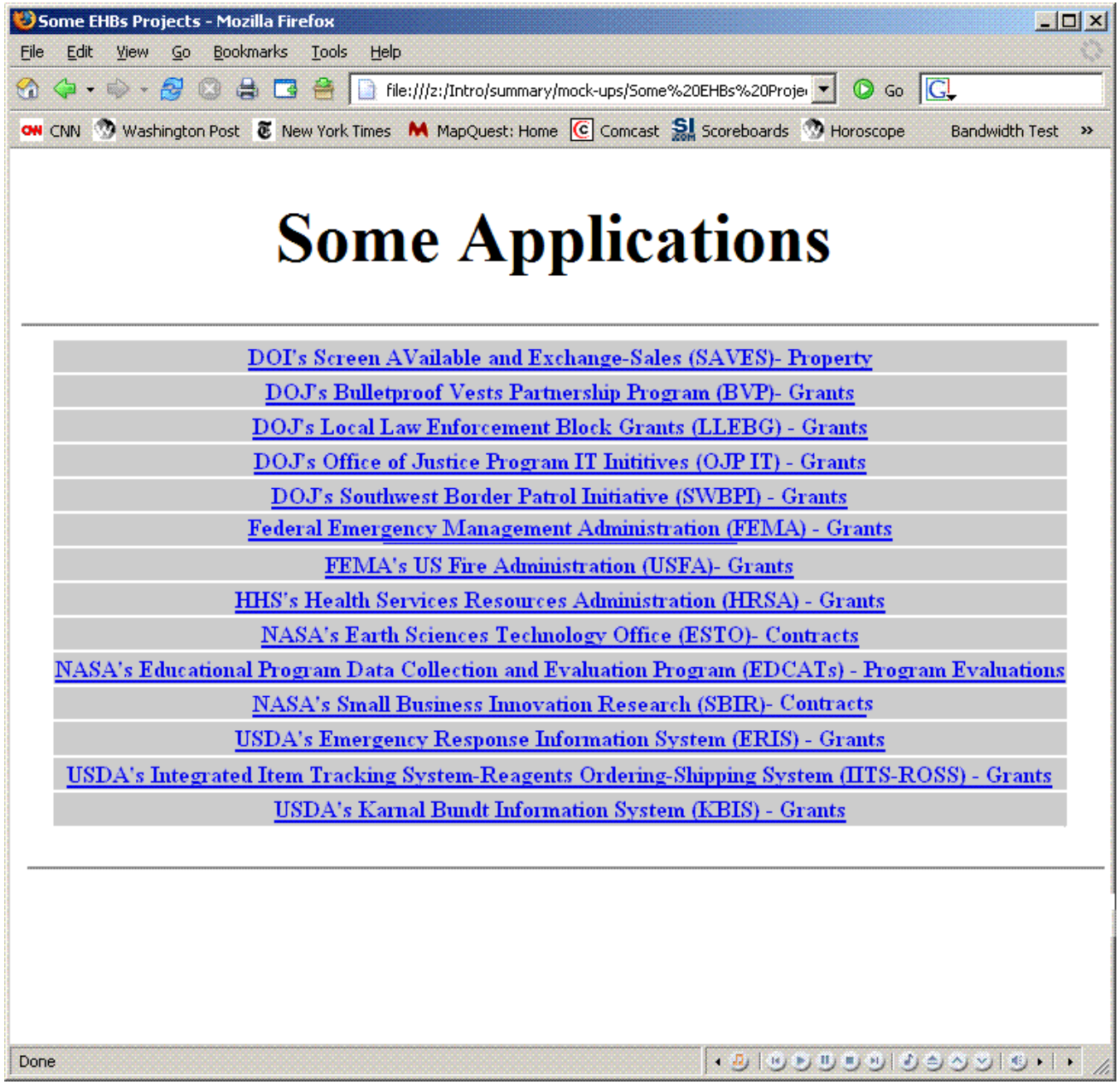


Process Libraries (PLs) and Electronic Handbooks (EHBs) are where Shakespeare meets Freud.

- In Process Libraries (PLs), subprocesses are represented as "plays" where "actors" communicate thru the Internet. Each organization puts on its own “productions”. For each role, Electronic Handbooks (EHBs) (also called Guidelines) guide “actors” thru their parts. Managers are "directors" using Worksheets as learning/management tools. Documentors serve as “playwrights”. [Shakespearean]

- Organizations are represented as “families" having "multiple personalities". Subprocess "plays" and its “components” provide communication vehicles between members of the same family, different families, and families from different subprocesses. Documentors also serve as "family therapists". [Freudian]

The approach uses a modernization of the Socratic Method or Dialogue to gain consensus between Teachers, Documentors, Managers, Implementors, and Participants.


Some EHBs Projects - Mozilla Firefox
File Edit View Go Bookmarks Tools Help
file:///z:/Intro/summary/mock-ups/Some%20EHBs%20Proje
Go
CNN Washington Post New York Times MapQuest: Home Comcast Scoreboards Horoscope Bandwidth Test
Some Applications
DOI's Screen AVailable and Exchange-Sales (SAVES)- Property
DOJ's Bulletproof Vests Partnership Program (BVP)- Grants
DOJ's Local Law Enforcement Block Grants (LLEBG) - Grants
DOJ's Office of Justice Program IT Initiatives (OJP IT) - Grants
DOJ's Southwest Border Patrol Initiative (SWBPI) - Grants
Federal Emergency Management Administration (FEMA) - Grants
FEMA's US Fire Administration (USFA)- Grants
HHS's Health Services Resources Administration (HRSA) - Grants
NASA's Earth Sciences Technology Office (ESTO)- Contracts
NASA's Educational Program Data Collection and Evaluation Program (EDCATs) - Program Evaluations
NASA's Small Business Innovation Research (SBIR)- Contracts
USDA's Emergency Response Information System (ERIS) - Grants
USDA's Integrated Item Tracking System-Reagents Ordering-Shipping System (IITS-ROSS) - Grants
USDA's Karnal Bundt Information System (KBIS) - Grants
Done

Subprocess Life-Cycle Views that are supported.

- **Organization subprocess teachers want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)** Organization subprocess teachers copy relevant organization subprocess Plays/Documents/Guidelines/Worksheets in the Process Library and then learn, integrate, test, and teach their new organization subprocess Plays/Documents/Guidelines/Worksheets.
- **Organization subprocess documentors want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)** Organization subprocess documentors copy relevant organization subprocess Plays/Documents/Guidelines/Worksheets in the Process Library and then learn, integrate, test, and teach their new organization subprocess Plays/Documents/Guidelines/Worksheets.
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- **Organization subprocess implementors want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical)** Organization subprocess implementors copy relevant organization subprocess Plays/Documents/Guidelines/Worksheets in the Process Library and then learn, integrate, test, and teach their new organization subprocess Plays/Documents/Guidelines/Worksheets.
- **Organization subprocess participants want to quickly learn, integrate, and perform tasks that are part of their views. (Critical)** Organization subprocess participants study the steps of their organization subprocess view Guidelines.
- **Organization subprocess managers want to quickly monitor execution of tasks that are part of their views.** Organization subprocess managers monitor the execution of tasks using their organization subprocess Plays/Documents/Guidelines/Worksheets.
- **Organization subprocess teachers, documentors, managers, implementors, and participants want to quickly update, test and teach their subprocesses.** Organization subprocess teachers, documentors, managers, implementors, and participants update, test, and teach their organization subprocess Plays/Documents/Guidelines/Worksheets.
- **Organization subprocess teachers, documentors, managers, implementors, and participants want to quickly update, test, and teach using other organization's views.** Organization subprocess teachers, documentors, managers, implementors, and participants update, test, and teach using other relevant organization subprocess Plays/Documents/Guidelines/Worksheets in the Process Library.
- **Organization subprocess teachers, documentors, managers, implementors, and participants become hurt/angry when their views are not supported.** Organization subprocess teachers, documentors, managers, implementors, and participants update, test, and teach their organization subprocess Plays/Documents/Guidelines/Worksheets.
- **Organization subprocess implementors want to quickly update, test and teach tools that help facilitate execution of their subprocesses.** Organization subprocess implementors update, test, and teach tools using requirements from Plays/Documents/Guidelines/Worksheets in the Process Library.
- **Organization subprocess teachers, documentors, managers, implementors, and participants want to quickly leave when their views continue not to be supported.** Organization subprocess teachers, documentors, managers, implementors, and participants archive their organization subprocess Plays/Documents/Guidelines/Worksheets.
- **The Key Human Factor Issue: Communication Within and Across Organizations.** Organization subprocess Plays/Documents/Guidelines/Worksheets in Process Libraries facilitate intra- and inter-organization communication.

Basic People Principles that are supported.

- **Subprocesses determine tools.** The approach supports people doing their jobs as they see it. Forcing additional tools on people only adds more burdens to their jobs and they will likely ignore them. Additional requirements should be integrated into existing subprocesses.

- **Everyone's subprocesses should be supported as best as possible.** The approach supports people seeing their jobs differently. This is often a good thing for subprocess improvement.

- **Tools are role-based so that data is collected during subprocess execution.** As people partake in the subprocesses, the approach supports data entry in the system. If data collection is done after the fact, the quality of the data generally suffers.

- **Tools are people-based so that users require minimal training.** The approach helps people to determine which steps to use. For each of the substeps (i.e., forms and documents), the approach should have clear templates, instructions, and samples.

- **Tools are web-based so that all users can easily partake.** The web-based approach supports the reduced need to install special software on user's computers. This is especially important in the case where the number of participants is large.

- **Everyone helps build the tools.** The approach supports joint ownership in the subprocesses and the underlying systems which is crucial for overall acceptance.

Subprocess/Play Developments that are supported.

- **Presentation & Paper/Marketing.** The approach supports presentation & paper/marketing using the contents of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

- **Worksheet/Outlining.** The approach supports worksheet/outlining using the drafting of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

- **Temporal Flow/Playwriting.** The approach supports temporal flow/playwriting using the drafting of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

- **Examples/Rehearsal.** The approach supports examples/rehearsals using the mockups of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

- **Implementation/Staging**. The approach supports implementation/staging using the building of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

- **Utilization/Performance.** The approach supports users utilization/performance using execution of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

- **Revision/New Production.** The approach supports revision/new production using updates of the Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

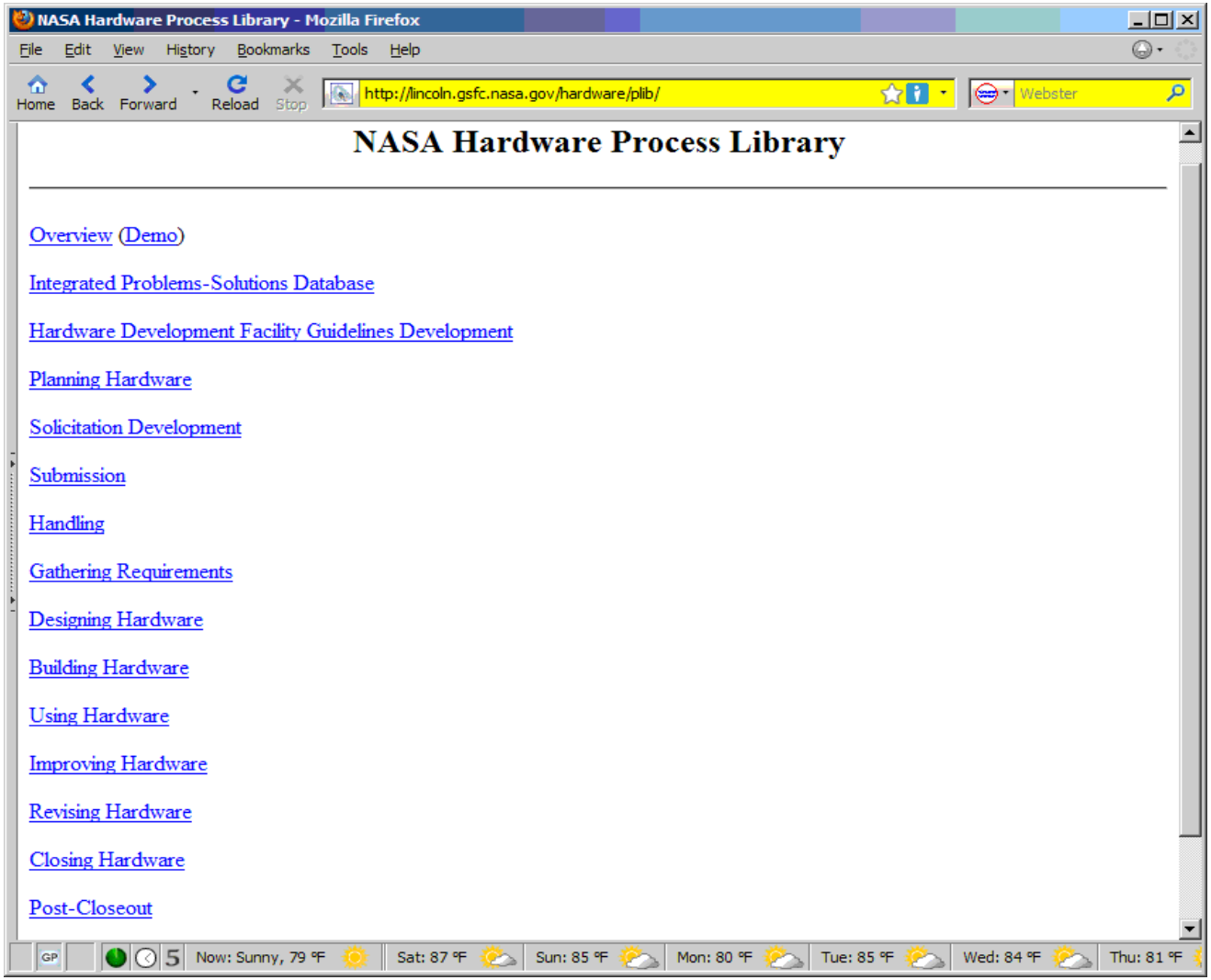
- **Closeout/End Production.** The approach supports closeout/ end performance using storage of the Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.

Process Library Operations that are supported.

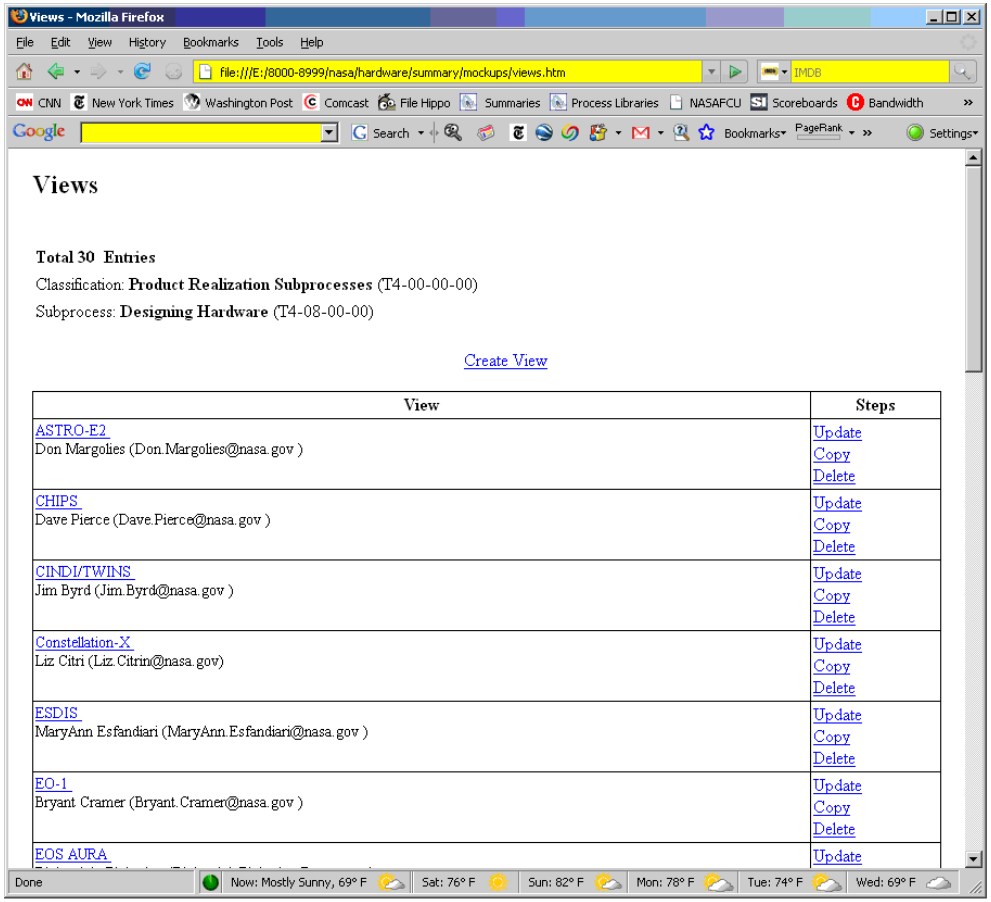
- **Organization Subprocess Formulation.** The approach supports the introduction of new organizations and their subprocesses into the library.
- **Organization Subprocess Implementation.** The approach supports implementation of common tools for organizations in the library.
- **Organization Subprocess Customer Support.** The approach supports user requests for the library.
- **Organization Subprocess Evaluation.** The approach supports organization subprocess evaluations.
- **Organization Subprocess Update.** The approach supports the updating of organizations and their subprocesses in the library.
- **Organization Subprocess Closeout.** The approach supports the closeouts of organizations and their subprocesses from the library.

Examples

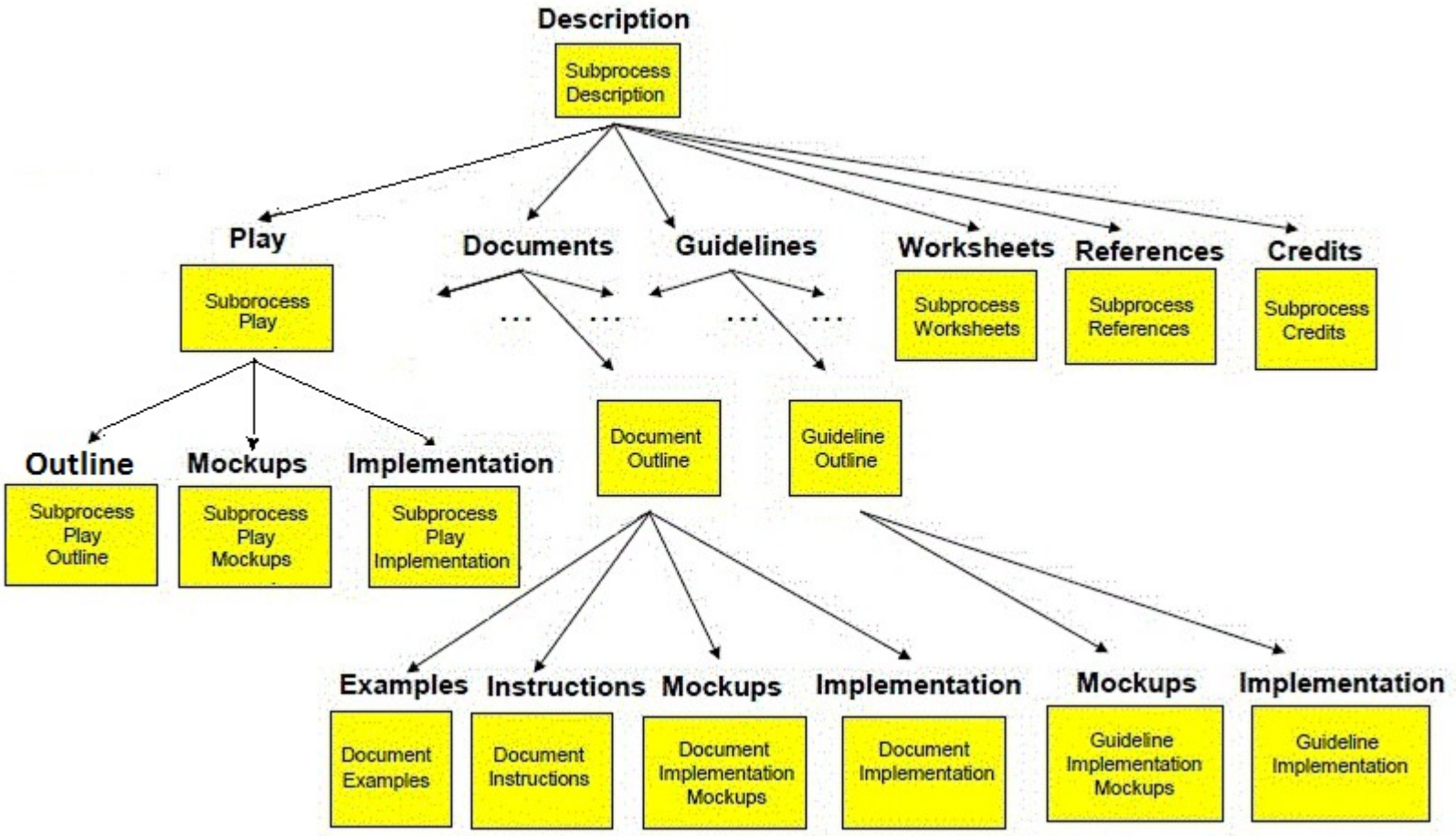
Process Libraries are organized by subprocesses.



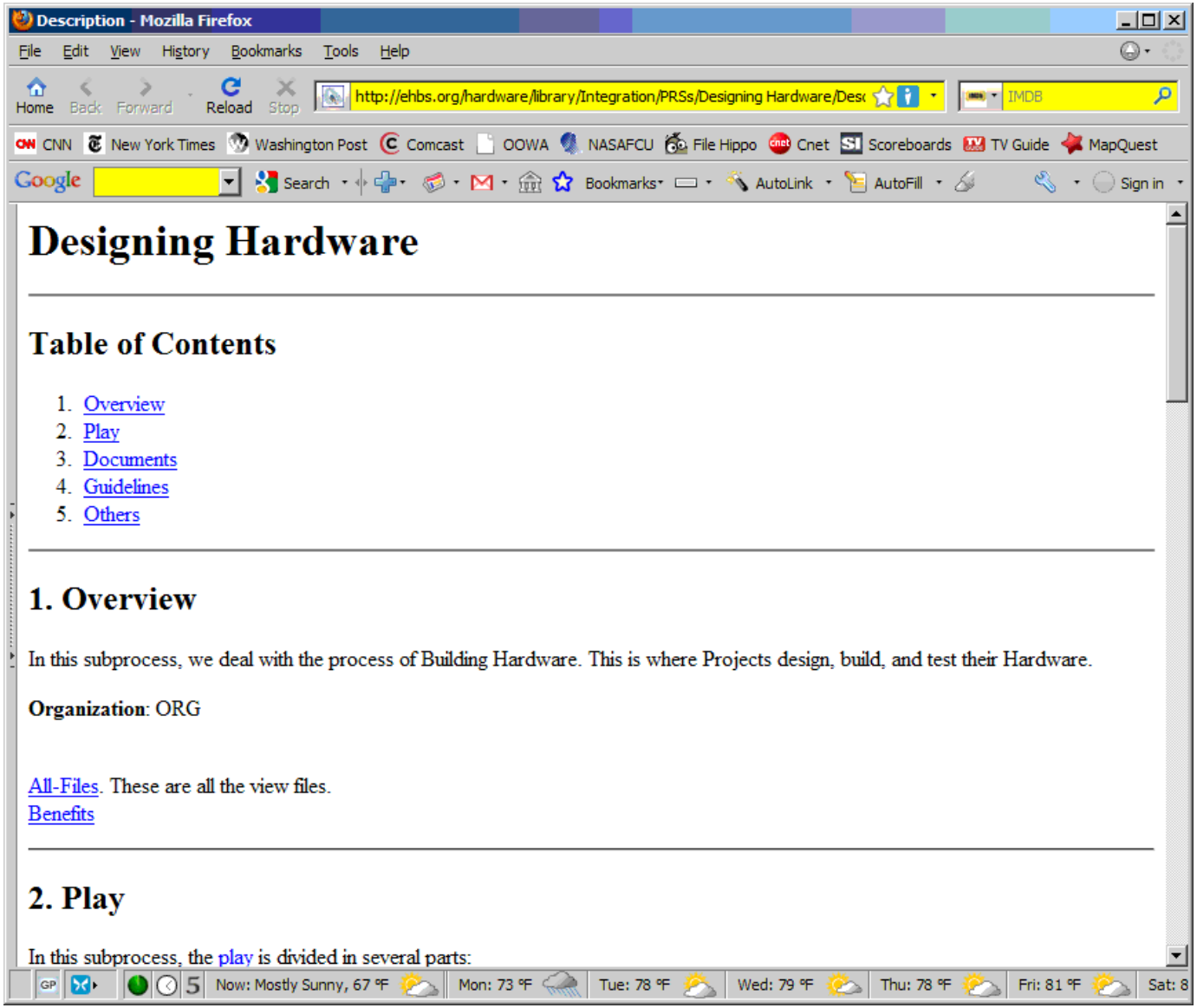
View Tools show how organizations view their subprocesses.



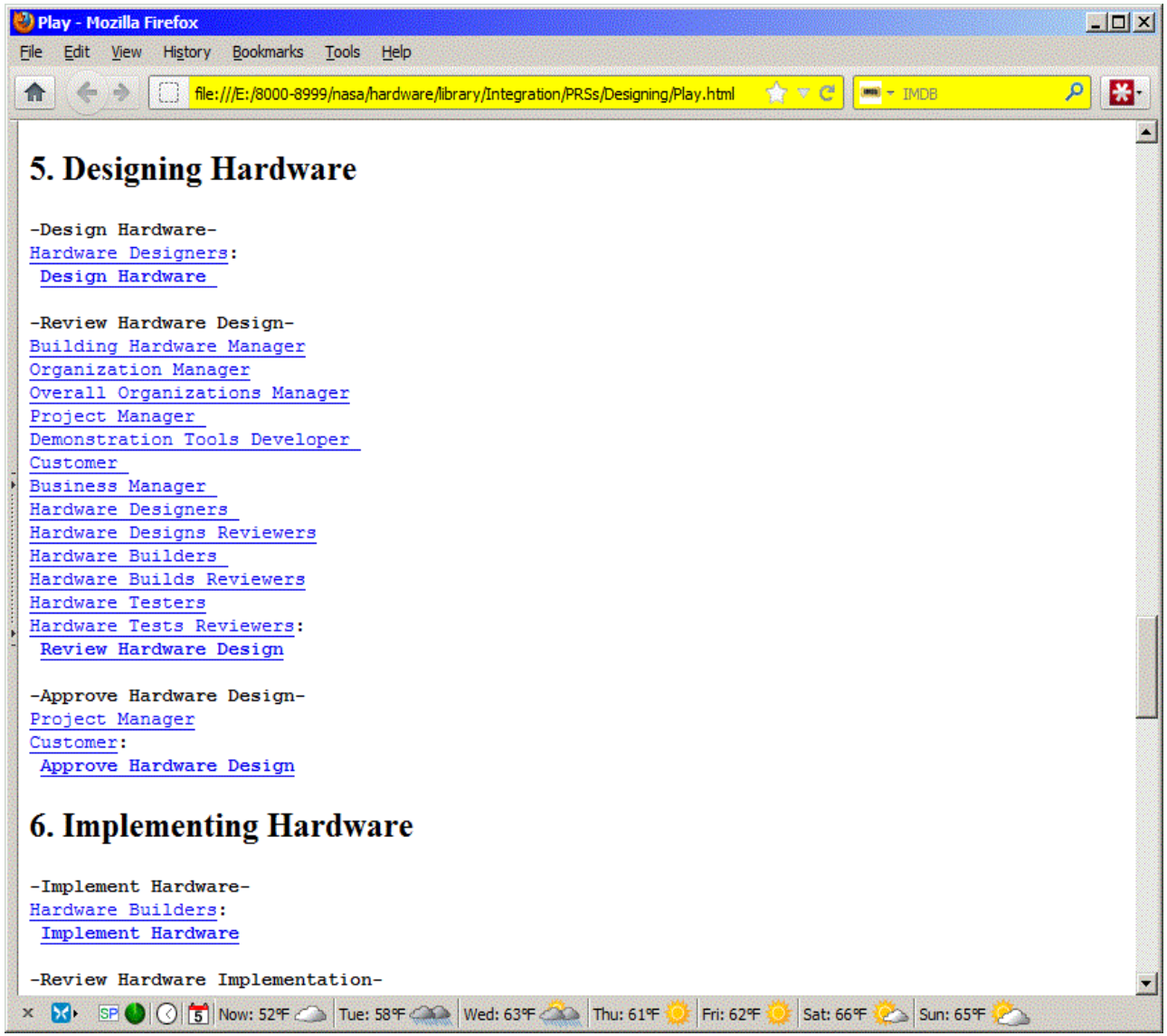
Subprocess View Tools contain the envelope of related files.



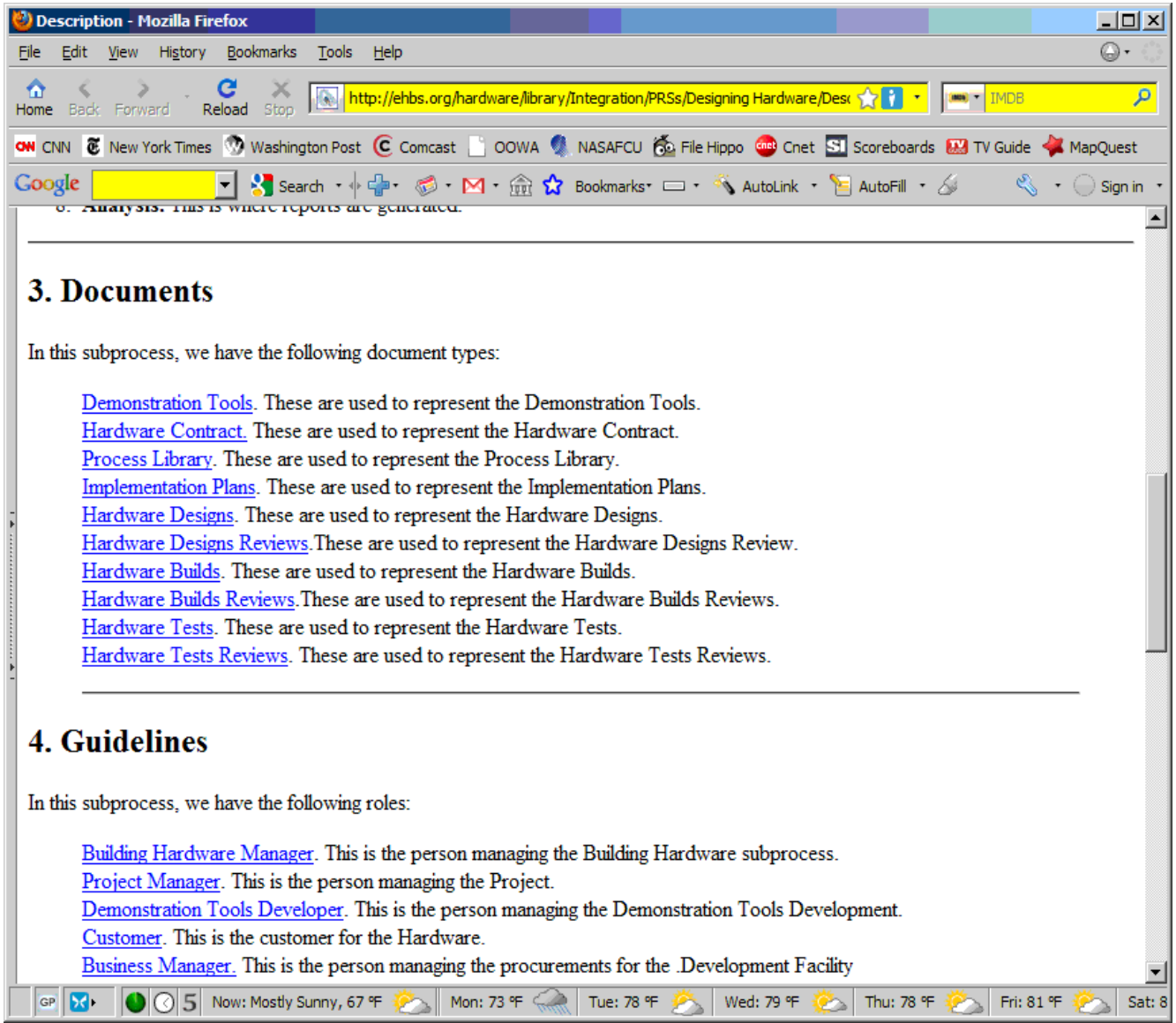
Descriptions summarize subprocesses.



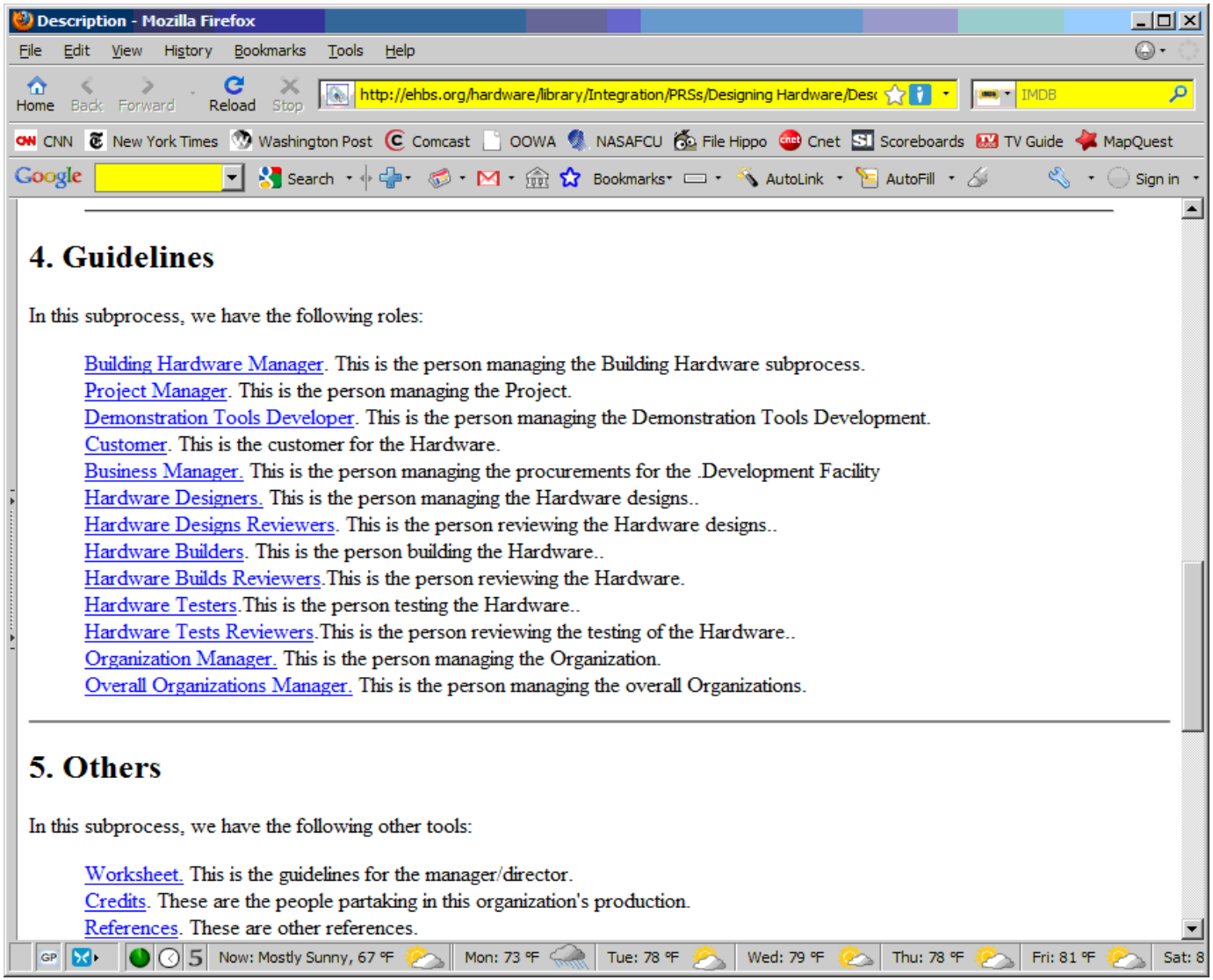
Plays describe subprocess execution.



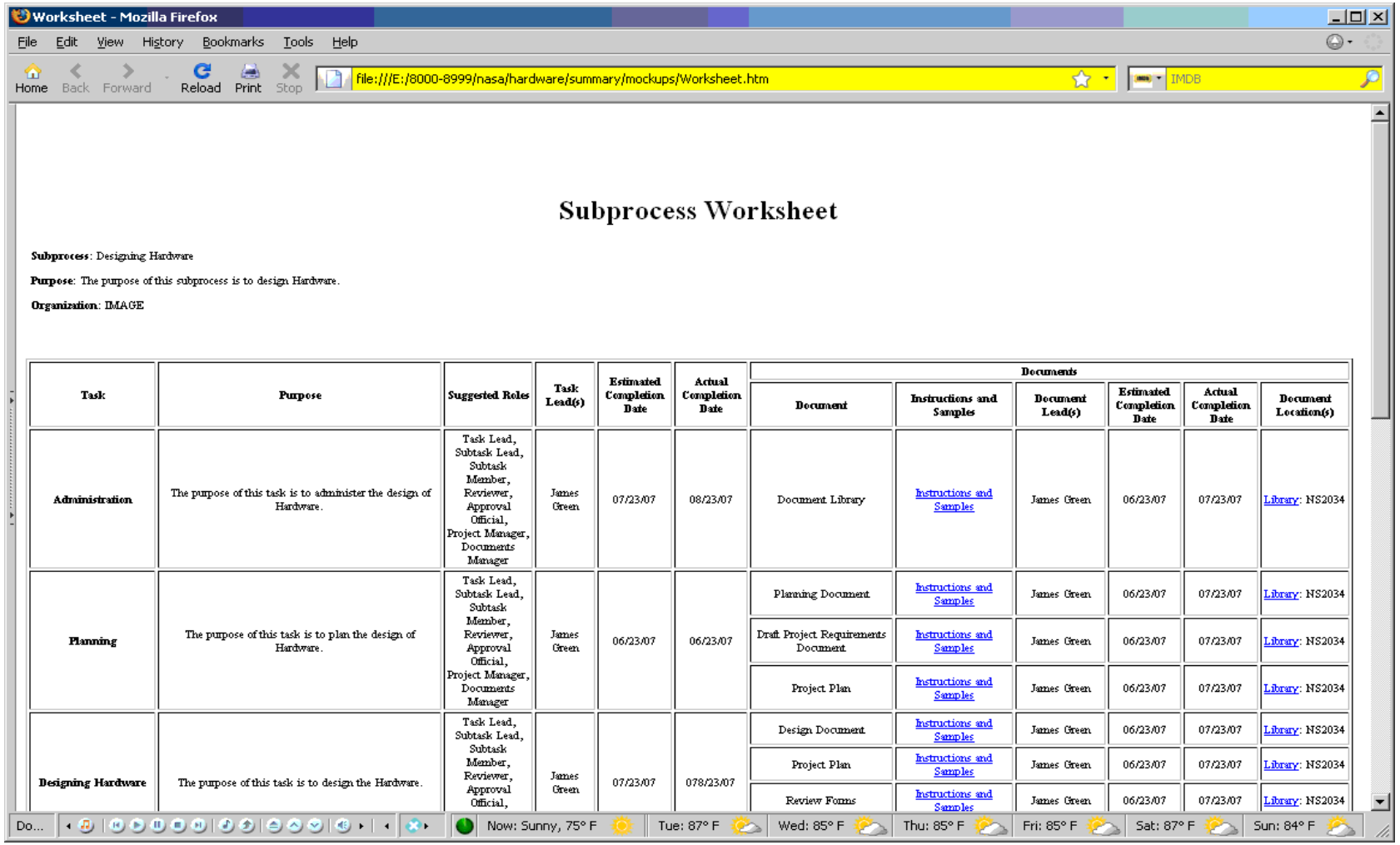
Documents describe subprocess data.



Guidelines describe user subprocesses.



Subprocess Worksheets facilitate subprocess manager communication with process developers and participants.



Subprocess Worksheet

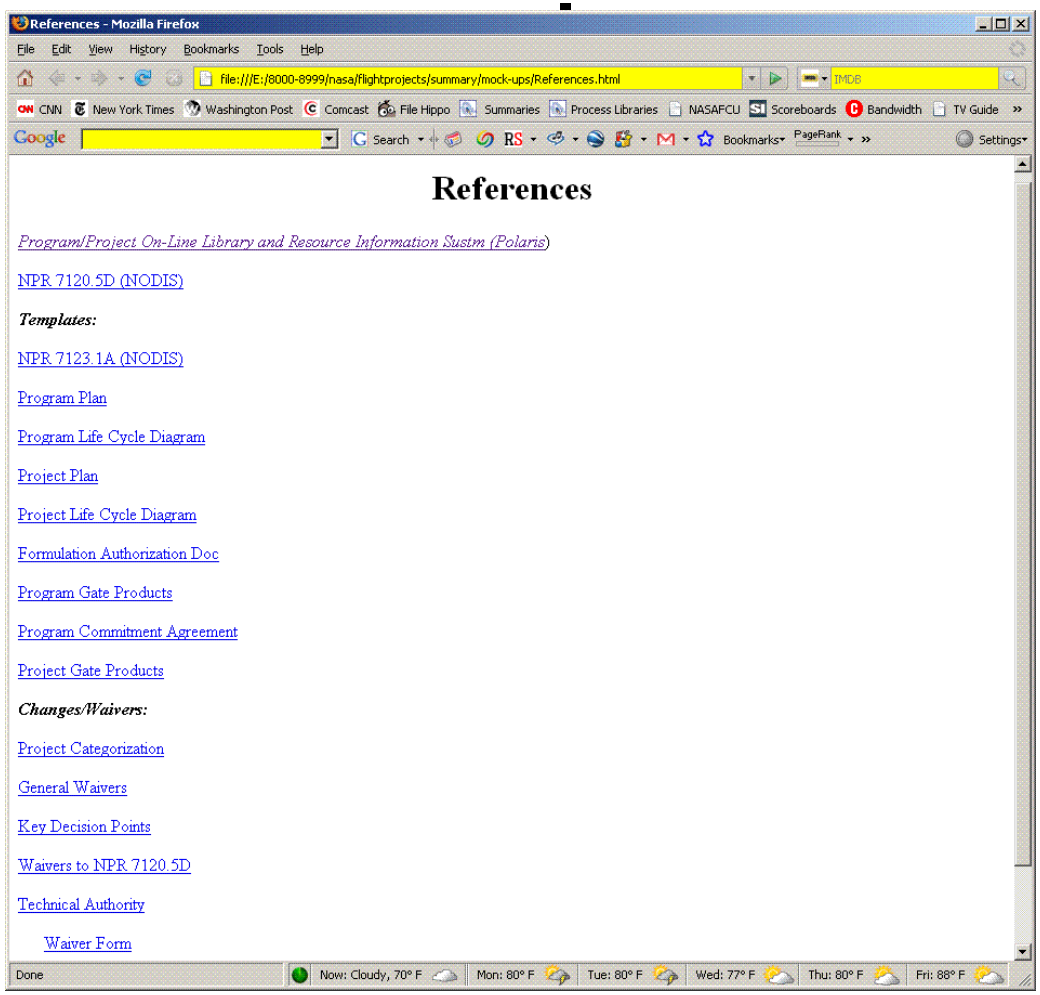
Subprocess: Designing Hardware

Purpose: The purpose of this subprocess is to design Hardware.

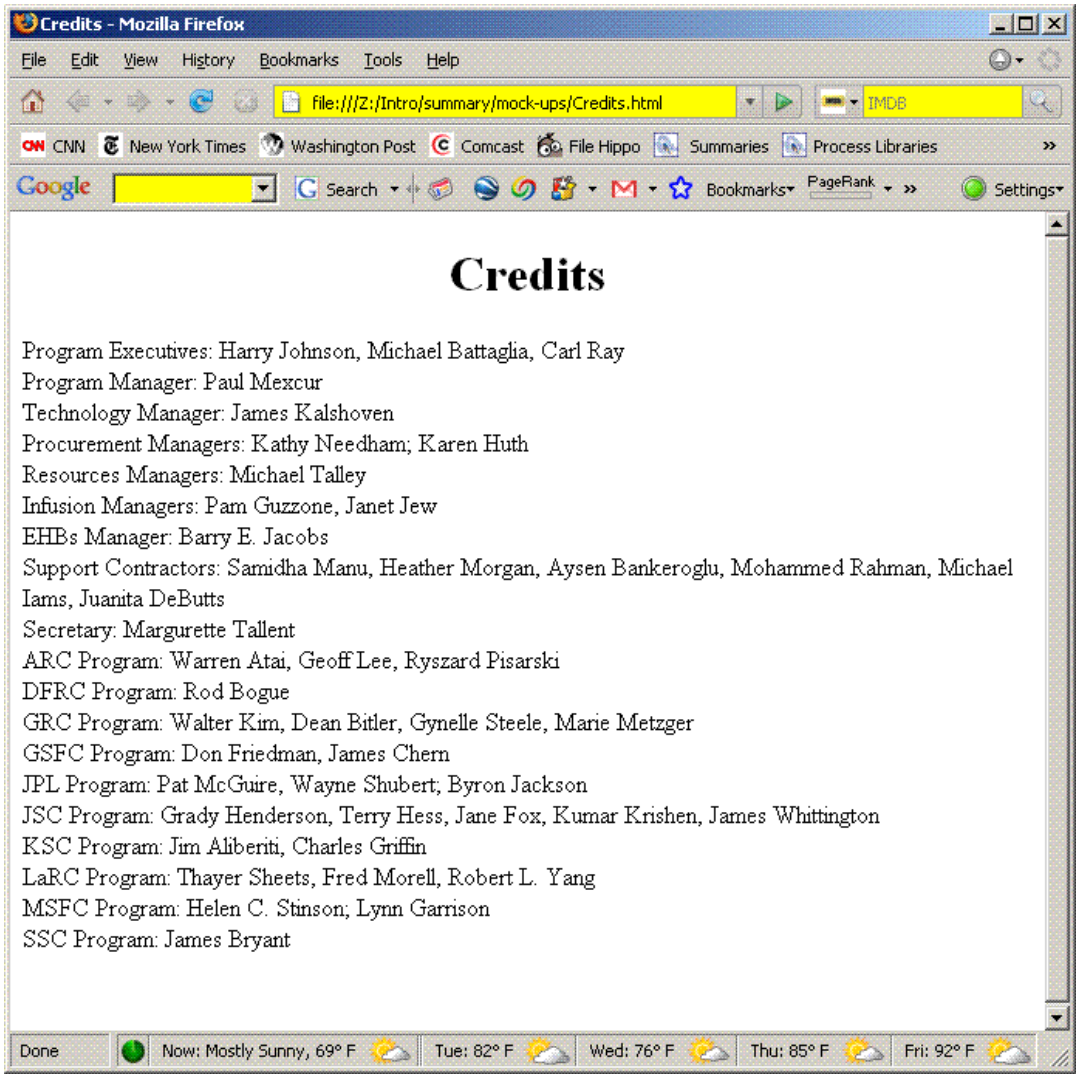
Organization: IMAGE

Task	Purpose	Suggested Roles	Task Lead(s)	Estimated Completion Date	Actual Completion Date	Documents					
						Document	Instructions and Samples	Document Lead(s)	Estimated Completion Date	Actual Completion Date	Document Location(s)
Administration	The purpose of this task is to administer the design of Hardware.	Task Lead, Subtask Lead, Subtask Member, Reviewer, Approval Official, Project Manager, Documents Manager	James Green	07/23/07	08/23/07	Document Library	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
Planning	The purpose of this task is to plan the design of Hardware.	Task Lead, Subtask Lead, Subtask Member, Reviewer, Approval Official, Project Manager, Documents Manager	James Green	06/23/07	06/23/07	Planning Document	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Draft Project Requirements Document	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Project Plan	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
Designing Hardware	The purpose of this task is to design the Hardware.	Task Lead, Subtask Lead, Subtask Member, Reviewer, Approval Official,	James Green	07/23/07	078/23/07	Design Document	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Project Plan	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034
						Review Forms	Instructions and Samples	James Green	06/23/07	07/23/07	Library: NS2034

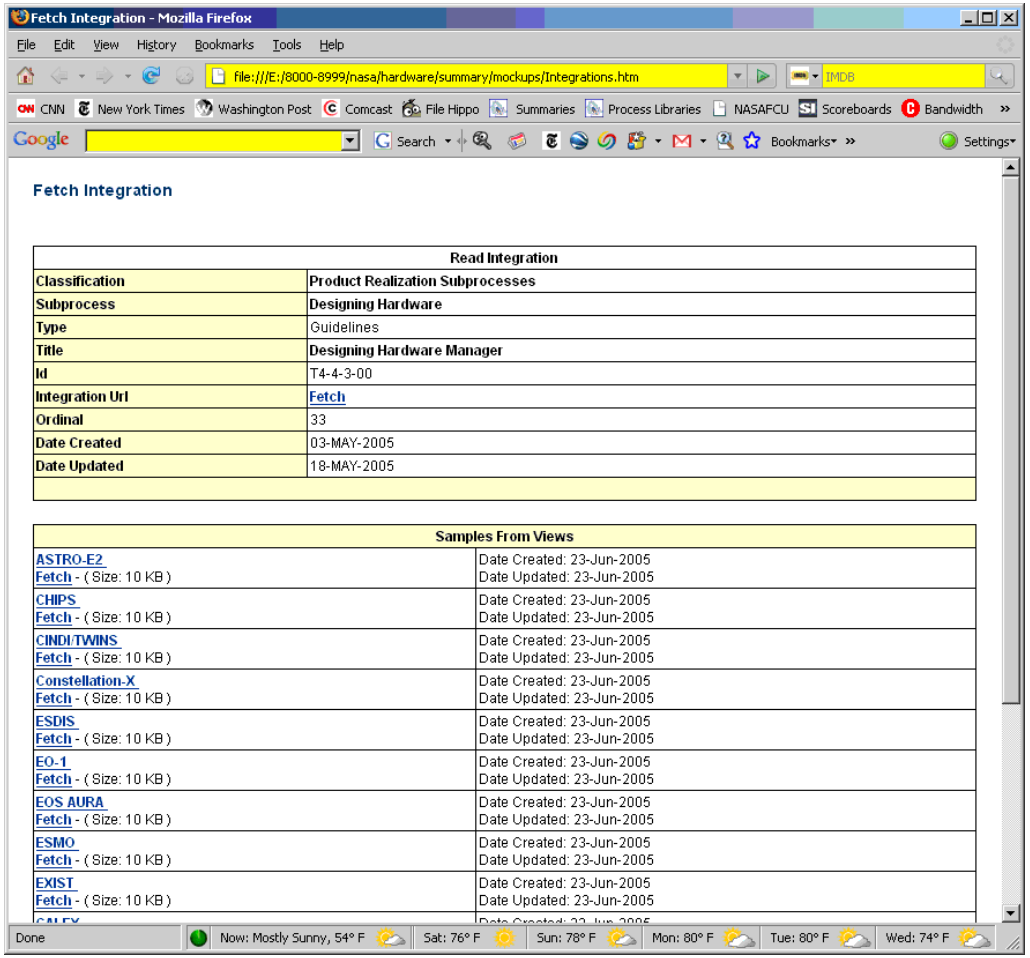
References list other related resources.



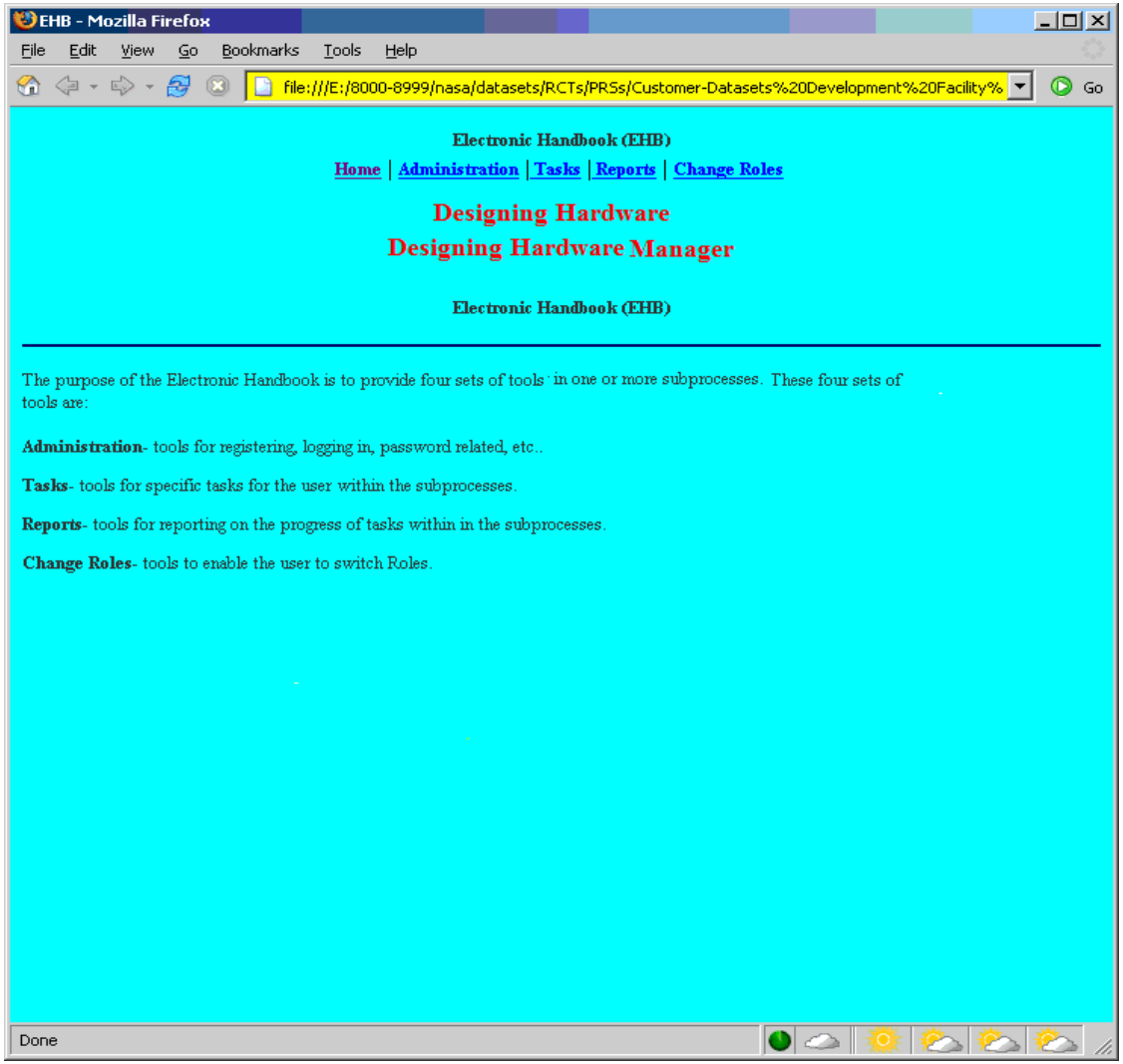
Credits acknowledge people's contributions.



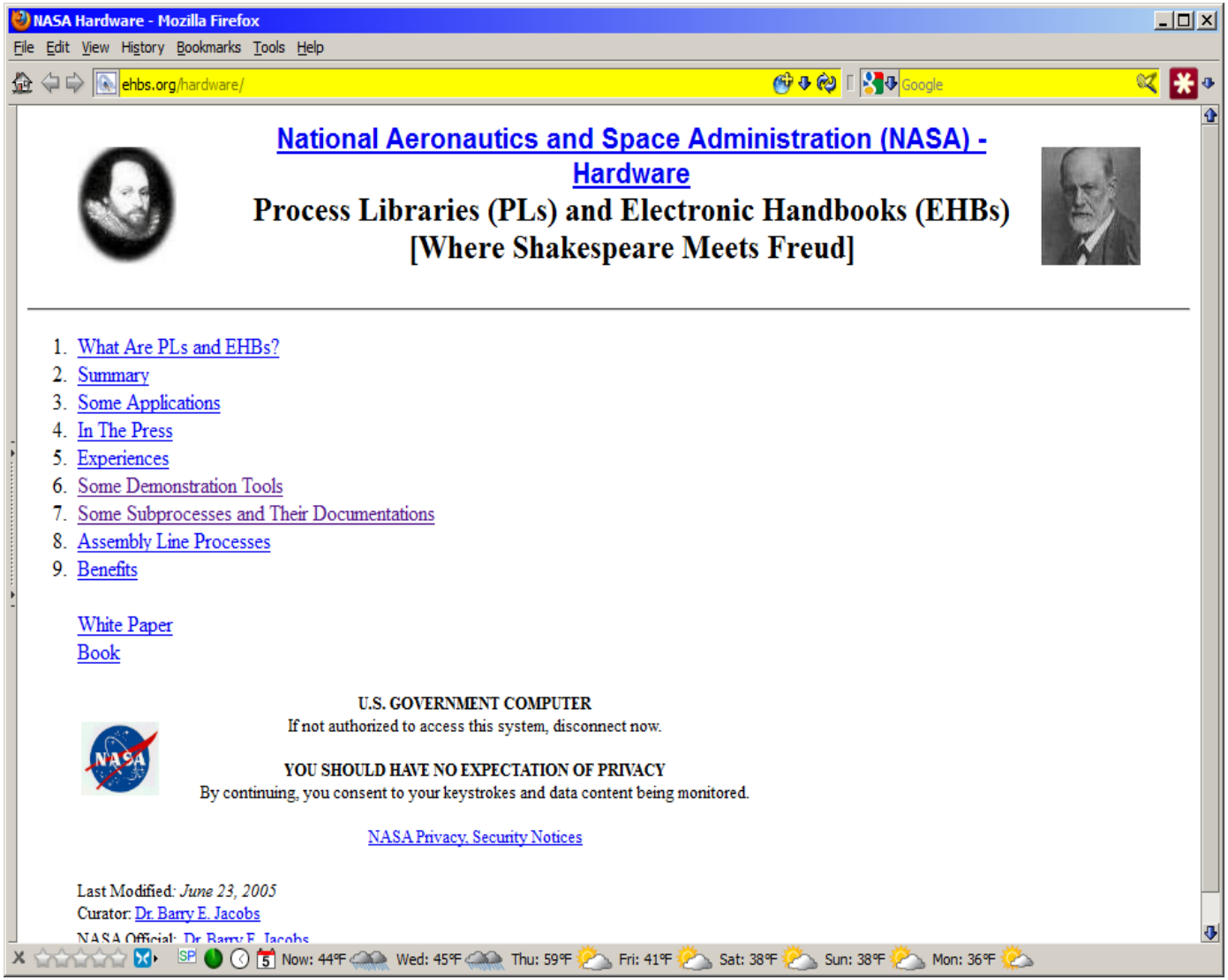
Integration Tools facilitate subprocess integration.



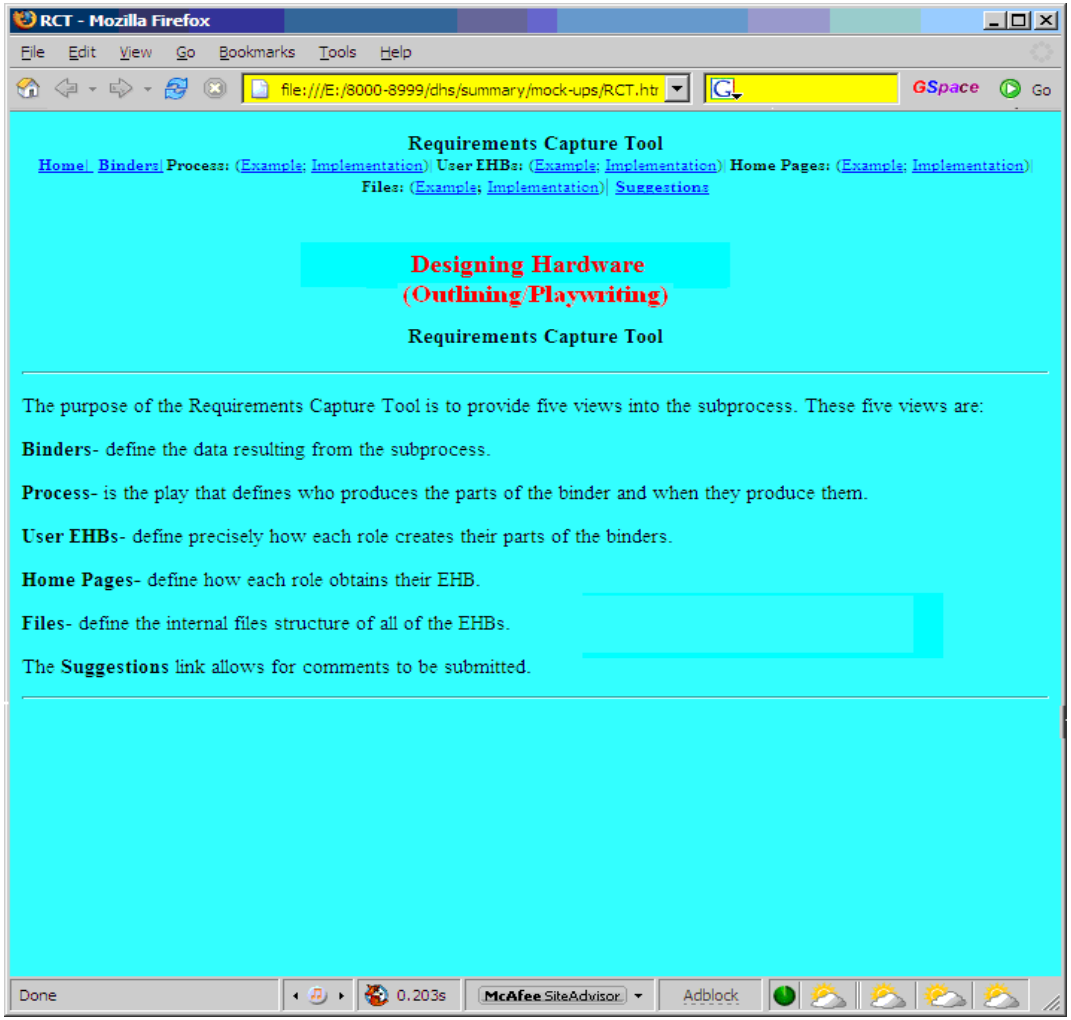
Electronic Handbooks (EHBs) facilitate the execution of subprocesses.



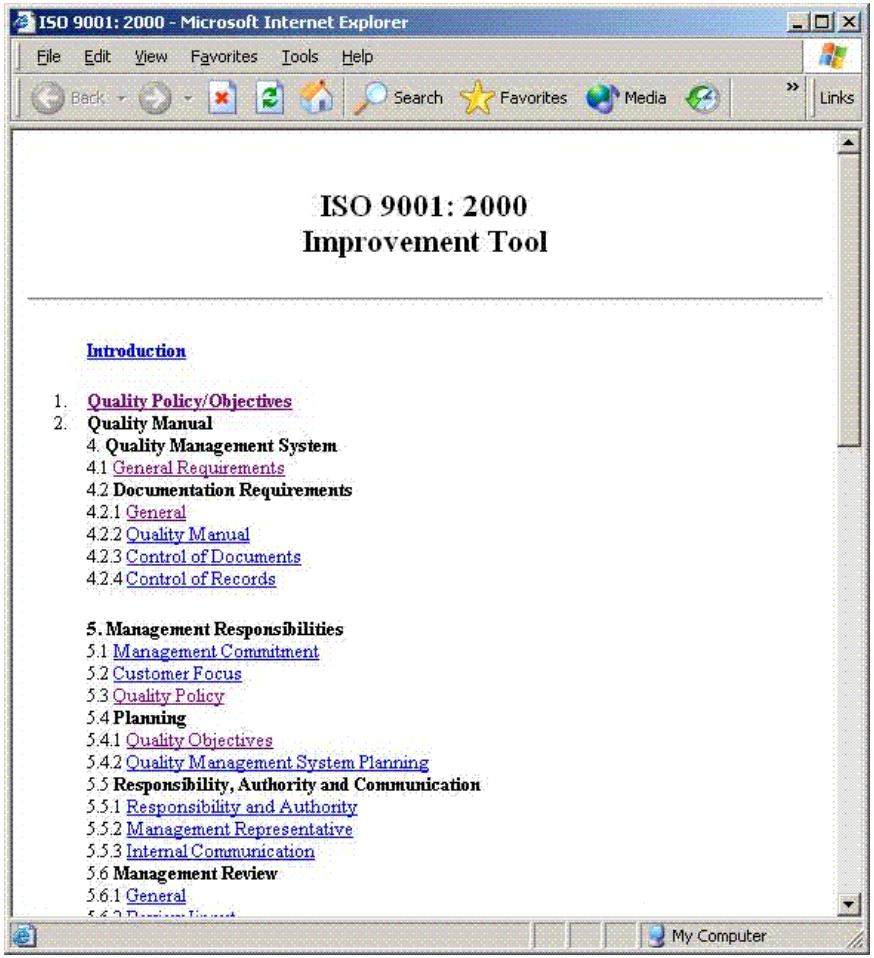
Demonstration Tools introduce the concepts to a community in their terms.



Requirements Capture Tools (RCTs) facilitate subprocess development.

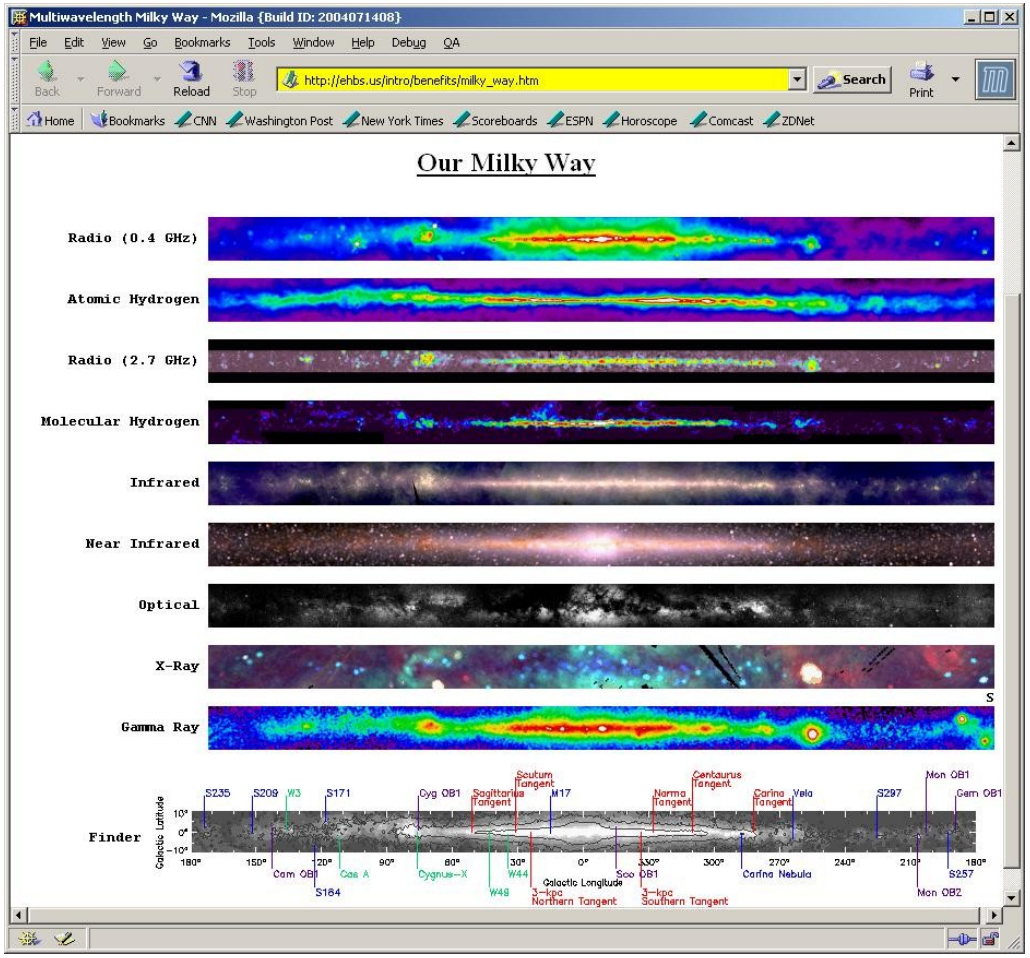


Improvement Tools facilitate subprocess improvement.



Final Thoughts

We believe that to truly understand one's universe, one must see it thru multiple “eyes” and also have tools to “communicate” these views.



All the world's a stage ...

Jaques:
All the world's a stage,
And all the men and women merely players;
They have their exits and their entrances,
And one man in his time plays many parts,
His acts being seven ages.

William Shakespeare
As You Like It, Act 2, Scene 7.

Some Effects of Separation

"Men hate each other because they fear each other;

They fear each other because they don't know each other;

They don't know each other because they can't communicate with each other;

They can't communicate with each other because they are separated from each other. "

Dr. Martin Luther King Jr.

September 3, 1957

Theatre of Dionysus- Athens, Greece

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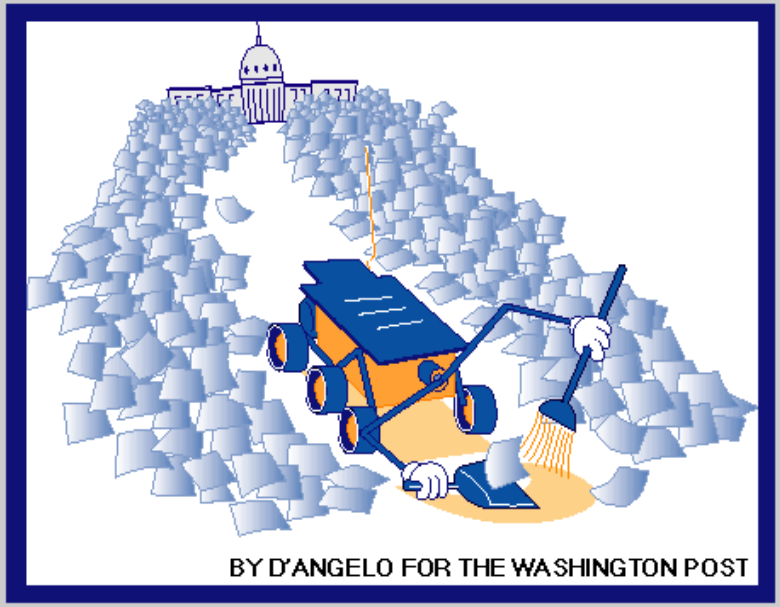
Complex Process Management Using Process Libraries and Electronic Handbooks

[Where Shakespeare Meets Freud]



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(301) 681-7816
[Mini-Bio]

Now: 64°F Sun: 83°F Mon: 60°F Tue: 62°F Wed: 76°F Thu: 78°F Fri: 62°F