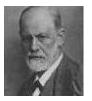
### NASA Directives Management Using Process Libraries and Electronic Handbooks

(Where Shakespeare Meets Freud)



**Summary** 





Dr. Barry E. Jacobs barry.e.jacobs@comcast.net

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.

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| 5. Designing Directives   |      |
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| Directives Designers:   |      |
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| -Review Directives Design-  |      |
| Building Directives Manager   |      |
| Organization Manager  |      |
| Overall Organizations Manager   |      |
| Project Manager   |      |
| Demonstration Tools Developer   |      |
| Customer  |      |
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| Directives Designs Reviewers  |      |
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| Approve Directives Design-  |      |
| Project Manager   |      |
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| 6. Implementing Directives  |      |
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| -Implement Directives-<br>Directives Builders:  |      |
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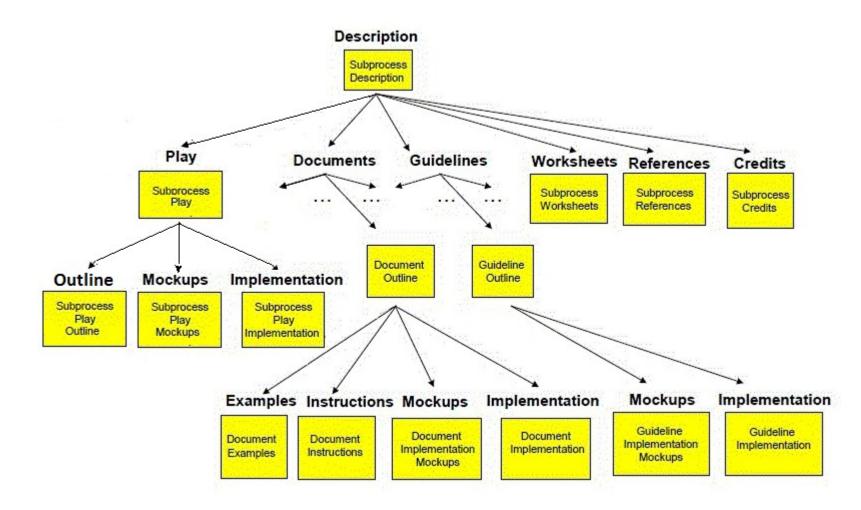
#### **Benefits:**

- 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,

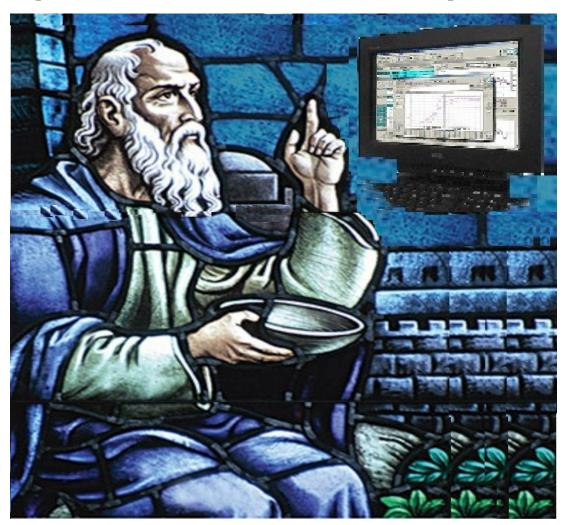
And all the men and women merely players;

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.**

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| Designing Directives   | <u> </u>   |
| Table of Contents  |            |
| 1. Overview         2. Play         3. Documents         4. Guidelines         5. Others   |            |
| 1. Overview  |            |
| In this subprocess, we deal with the process of Designing Directives. This is where Projects design, build, and test their Directives. |            |
| Organization: ORG  |            |
| <u>All-Files</u> . These are all the view files.<br><u>Benefits</u>  |            |
| 2. Play  |            |
| In this subprocess, the play is divided in several parts:  | ▼<br>at: { |

### Plays describe subprocess execution.

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| 5. Designing Directives   |      |
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| Directives Designers:   |      |
| Design Directives   |      |
| -Review Directives Design-  |      |
| Building Directives Manager   |      |
| Organization Manager  |      |
| Overall Organizations Manager   |      |
| Project Manager   |      |
| Demonstration Tools Developer   |      |
| Customer  |      |
| Directives Designers  |      |
| Directives Designs Reviewers  |      |
| Directives Builders   |      |
| Directives Builds Reviewers   |      |
| Directives Testers  |      |
| Directives Tests Reviewers:   |      |
| Review Directives Design  |      |
|   |      |
| Approve Directives Design-  |      |
| Project Manager   |      |
| Customer:   |      |
| Approve Directives Design   |      |
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| 6. Implementing Directives  |      |
| Tun lawant Disasting  |      |
| -Implement Directives-<br>Directives Builders:  |      |
| Implement Directives  |      |
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| -Review Directives Implementation-  |      |
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### **Documents describe subprocess data.**

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| 7. Analysis. This is where reports are generated.   | <b>_</b>       |
|   |                |
| 3. Documents  |                |
| 5. Documents  |                |
| In this subprocess, we have the following document types:   |                |
| in this subprocess, we have the following document types.   |                |
| Demonstration Tools. These are used to represent the Demonstration Tools.   |                |
| Directives Contract. These are used to represent the Directives Contract.   |                |
| Process Library. These are used to represent the Process Library.   |                |
| Implementation Plans. These are used to represent the Implementation Plans.   |                |
| Directives Designs. These are used to represent the Directives Designs.   |                |
| Directives Designs Reviews. These are used to represent the Directives Designs Review.                                  |                |
| Directives Builds. These are used to represent the Directives Builds.   |                |
| Directives Builds Reviews. These are used to represent the Directives Builds Reviews.                                   |                |
| Directives Tests. These are used to represent the Directives Tests.   |                |
| Directives Tests Reviews. These are used to represent the Directives Tests Reviews.                                     |                |
|   |                |
|   |                |
| 4. Guidelines   |                |
|   |                |
| In this subprocess, we have the following roles:  |                |
|   |                |
| Designing Directives Manager. This is the person managing the Designing Directives subprocess.                          |                |
| Project Manager. This is the person managing the Project.   |                |
| Demonstration Tools Developer. This is the person managing the Demonstration Tools Development.                         |                |
| Customer. This is the customer for the Directives.  | _              |
| Business Manager. This is the person managing the procurements for the .Development Facility                            |                |
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### Guidelines describe user subprocesses.

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| 4. Guidelines  |                |
| In this subprocess, we have the following roles:   |                |
| Designing Directives Manager. This is the person managing the Designing Directives subprocess.                         |                |
| Project Manager. This is the person managing the Project.  |                |
| Demonstration Tools Developer. This is the person managing the Demonstration Tools Development.                        |                |
| Customer. This is the customer for the Directives.   |                |
| Business Manager. This is the person managing the procurements for the .Development Facility                           |                |
| Directives Designers. This is the person managing the Directives designs   |                |
| Directives Designs Reviewers. This is the person reviewing the Directives designs                                      |                |
| Directives Builders. This is the person building the Directives  |                |
| Directives Builds Reviewers. This is the person reviewing the Directives.  |                |
| Directives Testers. This is the person testing the Directives  |                |
| Directives Tests Reviewers. This is the person reviewing the testing of the Directives                                 |                |
| Organization Manager. This is the person managing the Organization.  |                |
| Overall Organizations Manager. This is the person managing the overall Organizations.                                  |                |
|  | []             |
| 5. Others  |                |
| In this subprocess, we have the following other tools:   |                |
| Worksheet. This is the guidelines for the manager/director.  |                |
| Credits. These are the people partaking in this organization's production.   | -              |
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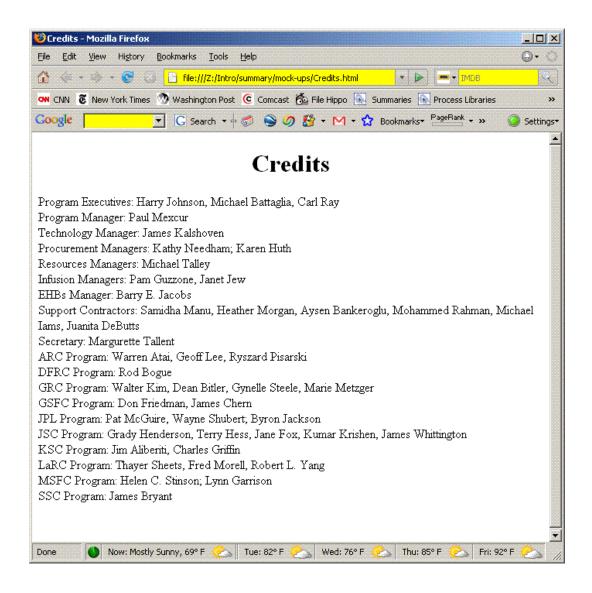
### Subprocess Worksheets facilitate subprocess manager communication with process developers and participants.

| 🕽 Worksheet - N   |  |  |                  |  |   |  |   |  |  |  | -                       |  |  |   |  |                                      |                      |          |  |  |
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| Subprocess: Designing Directives<br>Purpose: The purpose of this subprocess is to manage Directives<br>Organization: MSFC Directives Office |  |  |                  |  |   |  |   |  |  |  |                         |  |  |   |  |                                      |                      |          |  |  |
|   |  |  |                  |  |   |  | Documents   |  |  |  |                         |  |  |   |  |                                      |                      |          |  |  |
| Task  | Purpose  | Suggested Roles  | Task<br>Lead(s)  | Estimated<br>Completion<br>Date  | Actual<br>Completion<br>Date  | Document   | Instructions<br>and Samples   | Document<br>Lead(s)  | Estimated<br>Completion<br>Date  | Actual<br>Completion<br>Date   | Document<br>Location(s) |  |  |   |  |                                      |                      |          |  |  |
| Administration  | The purpose of this task is to<br>administer the design of Integrated<br>Problems and Solutions Database.  | Procurement Manager, Contracting Officer,<br>Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>Avardee,<br>Advisor,<br>Program Manager/Program Executive,<br>Mission Directorate Representative,<br>Topic Manager,<br>Subtopic Manager, Field Center Program<br>Manager,<br>Technology Infusion Manager,<br>Budget Personnel | Helen<br>Stinson | 07/23/07   | 08/23/07  | Document Library<br>(Engineering)  | Instructions and<br>Samples   | Helen<br>Stinson   | 06/23/07   | 07/23/07   | Library:<br>NS2034      |  |  |   |  |                                      |                      |          |  |  |
|   | The purpose of this task is to plan the  | Procurement Manager, Contracting Officer,<br>Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>an the Awardee,   |                  | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor, | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>Aurorates | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor, | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>Australia | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>Avanda | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor, | Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor, | formenent               | Helen  |  | Planning Document<br>(Bngineering)<br>Draft Project<br>Requirements<br>Document | Instructions and<br>Samples<br>Instructions and<br>Samples | Helen<br>Stinson<br>Helen<br>Stinson | 06/23/07<br>06/23/07 | 07/23/07 | Library:<br>NS2034<br>Library:<br>NS2034 |  |
| Planning  | design of Integrated Problems and<br>Solutions Database.   | Advisor,<br>Program Manager/Program Executive,<br>Mission Directorate Representative, Topic<br>Manager, Subtopic Manager, Field Center<br>Program Manager,   | Stinson          | 06/23/07   | 06/23/07  | (Engineering)<br>Project Plan<br>(Engineering)                                   | Instructions and<br>Samples   | Helen<br>Stinson   | 06/23/07   | 07/23/07   | Library:<br>NS2034      |  |  |   |  |                                      |                      |          |  |  |
|   |  | Technology Infusion Manager,<br>Budget Personnel   |                  |  |   | Document Library   | Instructions and  | Helen  | 06/23/07   | 07/23/07   | Library:                |  |  |   |  |                                      |                      |          |  |  |

#### **References list other related resources.**

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|                                | References  |                                    |                 |
|                                | iterefences   |                                    |                 |
| Program/Project On-Line Libi   | rary and Resource Information Sustm (Polaris)                           |                                    |                 |
| NPR 7120.5D (NODIS)            |   |                                    |                 |
| Templates:                     |   |                                    |                 |
| NPR 7123.1A (NODIS)            |   |                                    |                 |
| Program Plan                   |   |                                    |                 |
| Program Life Cycle Diagram     |   |                                    |                 |
| Project Plan                   |   |                                    |                 |
| Project Life Cycle Diagram     |   |                                    |                 |
| Formulation Authorization Doc  |   |                                    |                 |
| Program Gate Products          |   |                                    |                 |
|                                |   |                                    |                 |
| Program Commitment Agreeme     | <u>nr</u>   |                                    |                 |
| Project Gate Products          |   |                                    |                 |
| Changes/Waivers:               |   |                                    |                 |
| Project Categorization         |   |                                    |                 |
| <u>General Waivers</u>         |   |                                    |                 |
| Key Decision Points            |   |                                    |                 |
| Waivers to NPR 7120.5D         |   |                                    |                 |
| Fechnical Authority            |   |                                    |                 |
| Waiver Form                    |   |                                    |                 |

### Credits acknowledge people's contributions.



### Tools that can be focused on during stagesby tool.

| 🥹 Tools To Focus On During Stages Mozilla f        | irefox                   |  |   |           |  |  |  |
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|  | Too                      | Cools To Focus On During Stages- By Tool.                |   |           |  |  |  |
|  | Tool                     | Process Developer  | Process Participant   |           |  |  |  |
|  | Descriptions             | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Documents Uring Role Guidelines/ZHBs,<br>Test,<br>Teach,<br>Work Together |           |  |  |  |
|  | Plays                    | Learn,<br>Integrate,<br>Test,<br>Tesch,<br>Work Together | Learn,<br>Integrate Documents Using Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |  |  |  |
| -  | Documents                | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Document: Using Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |  |  |  |
|  | Role<br>Guidelines/EHBs  | Learn,<br>Integrate,<br>Test,<br>Tesch,<br>Work Together | Learn,<br>Integrate Document: Using Role Guidelines/IHBs,<br>Test,<br>Tesch,<br>Work Together |           |  |  |  |
|  | Subprocess<br>Worksheets | Learn,<br>Integrate,<br>Test,<br>Teack,<br>Work Together | Learn,<br>Integrate Documents Using Role Guidelines/ZHBs,<br>Test,<br>Teach,<br>Work Together |           |  |  |  |
|  | References               | Learn,<br>Integrate,<br>Test,<br>Tesch,<br>Work Together | Learn,<br>Integrate Documents Uning Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |  |  |  |
|  | Credits                  | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Documents Using Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |  |  |  |

### Tools that can be focused on during stagesby stage.

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|---|------------------|---|---|-------|
|   |                  | Tools To Focus On Dur   | ing Stages- By Stage.   |       |
|   | Stage            | Process Developer   | Process Participant   |       |
|   | Learn            | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |
|   | Integrate        | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Documents Using Role Guidelines/EHBs.   |       |
|   | Test             | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |
|   | Teach            | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |
|   | Work<br>Together | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>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.

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|  |                             |   |  | Di   | rective   | <u>es</u>  |                            |  |                        |                   |              |
|  |                             |   |  | Product Rea  | alization Subj  | processes*   |                            |  |                        |                   |              |
| Integrated<br>Problems-<br>Solutions<br>Database |                             | oment<br>lity Submis<br>ation             | sion Handling  | Gathering<br>Requiremer  | g Designing<br>nts Directives   |  |                            |  | Revising<br>Directives |                   | Post-Closeou |
|  |                             |   |  | (Potential   | Customers: N  | IASA)  |                            |  |                        |                   |              |
|  |                             |   |  | Product Dis  | tribution Subj  | processes  |                            |  |                        |                   |              |
| Integrated Prol<br>Solutions Date                |                             | Planning<br>Distributions                 | Distributio<br>Solicitation                            |  | Problem<br>Submission   | Problem<br>Handling  |                            | ement<br>stration                              | Agreement<br>Closeout  | Post-Agr<br>Close |              |
|  |                             |   |  | (Potential   | Customers: N  | (ASA)  |                            |  |                        |                   |              |
|  |                             |   |  |  |   | 1 A A  |                            |  |                        |                   |              |
|  |                             |   |  | Supp   | ort Subprocess  |  |                            |  |                        |                   |              |
|  | Survey<br>Managem           |   | Systems<br>of Operations<br>and Networ                 | Home Pa<br>Managen   | ort Subprocess<br>Education<br>age and  |  |                            | Small<br>Systems<br>(Mac<br>and PC)<br>Support | Visualiza              | tions             |              |
|  |                             | Systems<br>Development<br>and             | Systems<br>of Operations<br>and Network                | Home P:<br>Managen<br>on   | age Education<br>and Outreach<br>Activities   | Facilities<br>Manageme   |                            | Systems<br>(Mac<br>and PC)                     | Visualiza              | tions             |              |
|  |                             | Systems<br>Development<br>and             | Systems<br>of Operations<br>and Network                | Home Pa<br>k<br>on<br>Improve  | ert Subprocess<br>Education<br>age and<br>outreach  | Facilities<br>Manageme   | nt Securit                 | Systems<br>(Mac<br>and PC)                     | Visualiza              | tions             |              |
|  |                             | Systems<br>Development<br>and             | Systems<br>Operations<br>and Networ<br>Administrati    | Home P:<br>Managen<br>on<br>Improve  | ert Subprocess<br>age<br>eent Outreach<br>Activities<br>ment Subproc  | esses<br>CMAnageme<br>esses<br>CMA<br>Contin   | nt Securit                 | Systems<br>(Mac<br>and PC)                     | Visualiza              | tions             |              |
|  |                             | Systems<br>Development<br>and             | subprocess   | Improve<br>Managen<br>Improve<br>11: 2000 C<br>Comm<br>Comm<br>Subprove                | ert Subprocess<br>age<br>Leducation<br>and<br>Outreach<br>Activities<br>ment Subproces<br>CMMI- Staged<br>con Subprocess<br>zation<br>Subprocess<br>process<br>Subprocess<br>Lean | esses<br>CManageme<br>esses<br>CMA<br>Continu<br>ses   | nt Securiți<br>II-<br>uous | Systems<br>(Mac<br>and PC)                     | tion                   | tions             |              |
|  |                             | Systems<br>Developmer<br>and<br>Evolution | nt Systems<br>Operations<br>and Networ<br>Administrati | Improve<br>Managen<br>Improve<br>11: 2000 C<br>Comm<br>Comm<br>Subpr<br>Custo<br>Custo | ert Subprocess<br>age<br>Leducation<br>and<br>Outreach<br>Activities<br>ment Subproces<br>CMMI- Staged<br>con Subprocess<br>zation<br>Subprocess<br>process<br>Subprocess<br>Lean | esses<br>CMM<br>Contine<br>ses<br>ization Org<br>Substantiation Substantiation Substantiati | Int Security               | Systems<br>(Mac<br>and PC)<br>Support          | tion                   | tions             |              |

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

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| Product Realization Subprocesses Org             | anizations           |
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| JSC Directives Office                            |                      |
| KSC Directives Office                            |                      |
| LaRC Directives Office                           |                      |
| MSFC Directives Office                           |                      |
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| JPL Directives Office                            |                      |
| JSC Directives Office                            |                      |
| KSC Directives Office                            |                      |
| LaRC Directives Office<br>MSEC Directives Office |                      |

### Organizations execute the eight "Play Development" stages.

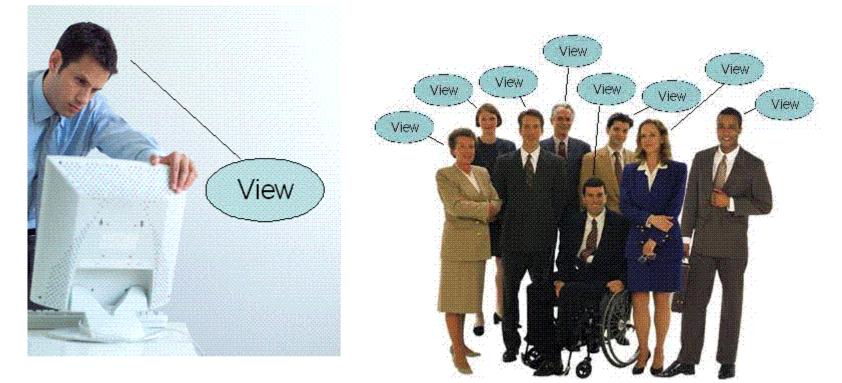
1) summarizing (descriptions),

- 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"

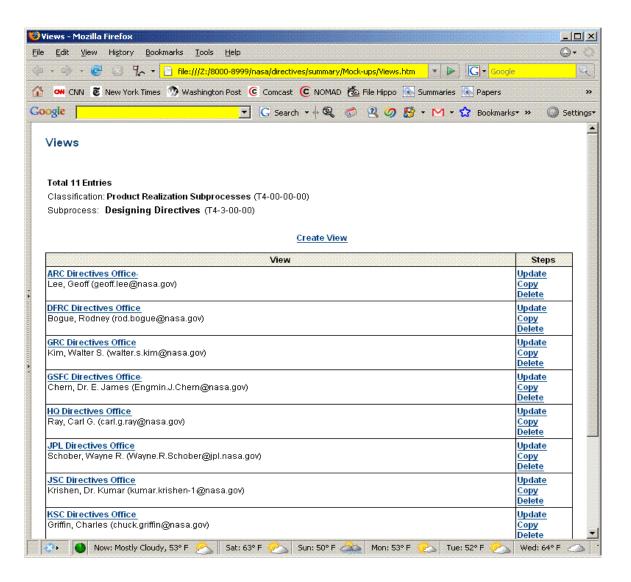




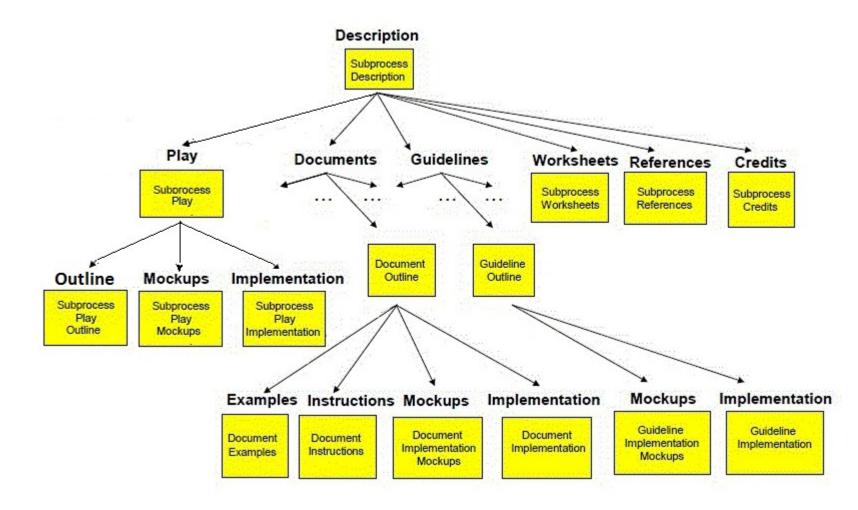
# Overview of how editable and cost-saving process documentation tools can solve problems.

| Problem  | Solution  |
|--|---|
| Develop Internet-based tools to support the paperless<br>documentation and management of complex distributed<br>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<br>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.



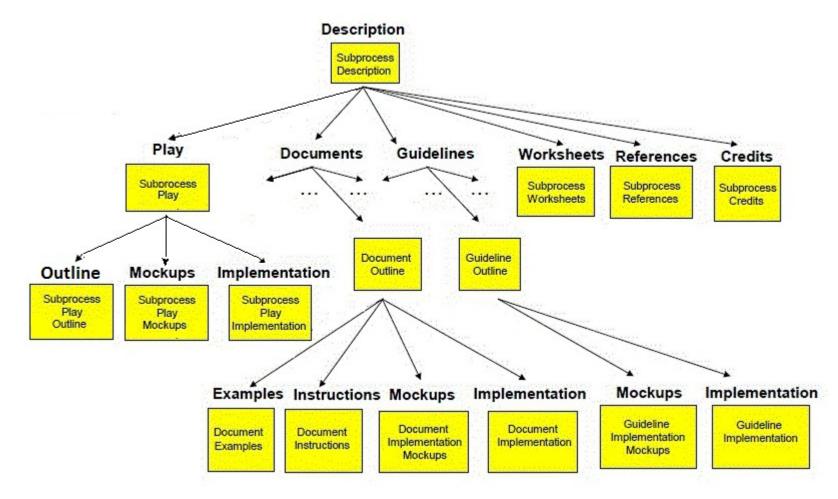
### Tools that can be focused on during stagesby tool.

| 😺 Tools To Focus On During Stages Mozilla F        | ïrefox                                    |  |   |           |
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|  | Tools To Focus On During Stages- By Tool. |  |   | 9         |
|  | Tool                                      | Process Developer  | Process Participant   |           |
|  | Descriptions                              | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Documents Using Role Guidelines/THBs,<br>Test,<br>Teach,<br>Work Together |           |
|  | Plays                                     | Learn,<br>Integrate,<br>Test,<br>Tesch,<br>Work Together | Learn,<br>Integrate Documents Using Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |
|  | Documents                                 | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Document: Using Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |
|  | Role<br>Guideline:/EHB:                   | Learn,<br>Integrate,<br>Test,<br>Tesch,<br>Work Together | Learn,<br>Integrate Document: Using Role Guidelines/ZHBs,<br>Test,<br>Tesch,<br>Work Together |           |
|  | Subprocess<br>Worksheets                  | Learn,<br>Integrate,<br>Test,<br>Teack,<br>Work Together | Learn,<br>Integrate Documents Using Role Guidelines/ZHBs,<br>Test,<br>Teach,<br>Work Together |           |
|  | References                                | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Document: Using Role Guidelines/IHBs,<br>Test,<br>Tesch,<br>Work Together |           |
|  | Credits                                   | Learn,<br>Integrate,<br>Test,<br>Teach,<br>Work Together | Learn,<br>Integrate Document Using Role Guidelines/IHBs,<br>Test,<br>Tesch,<br>Work Together  |           |

### Tools that can be focused on during stagesby stage.

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|---|------------------|---|---|-------|
|   |                  | Tools To Focus On Dur   |   |       |
|   | Stage            | Process Developer   | Process Participant   |       |
|   | Learn            | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |
|   | Integrate        | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Documents Using Role Guidelines/EHBs.   |       |
|   | Test             | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |
|   | Teach            | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |
|   | Work<br>Together | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. | Descriptions,<br>Plays,<br>Documents,<br>Role Guidelines/EHBs,<br>Subprocess Worksheets,<br>References,<br>and Credits. |       |

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



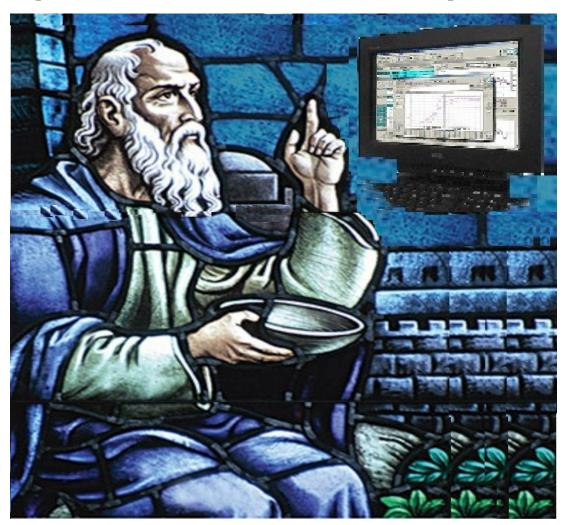


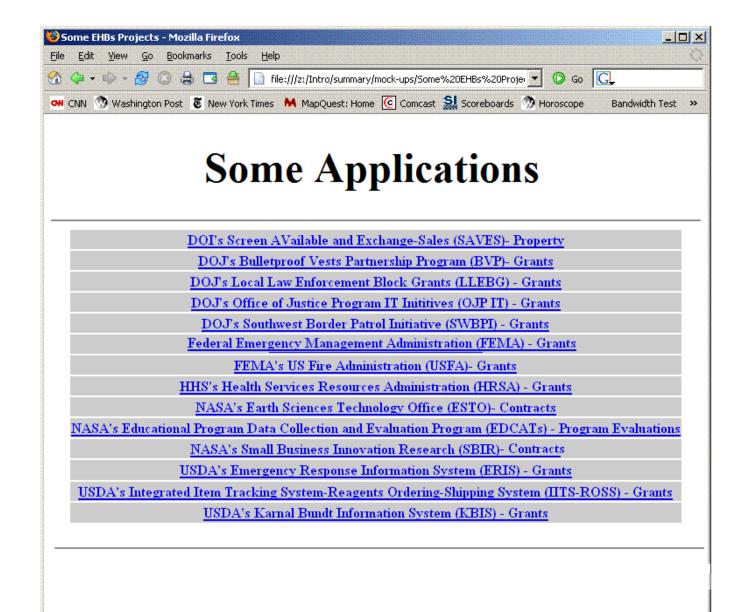
### Process Libraries (PLs) and Electronic Handbooks (EHBs) are where Shakespeare meets Freud.



- 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.





# 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.
- 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.
- Organization subprocess managers want to quickly learn, integrate, test, and teach their own views of their subprocesses. (Critical) Organization subprocess managers 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 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 interorganization 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.

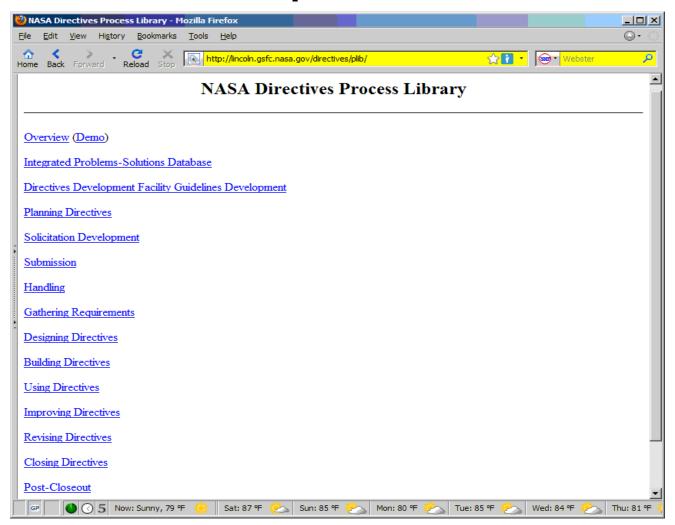
- •Presentation & Paper/Marketing. The approach supports presentation & paper/marketing using the contents of Descriptions, Plays, Documents, Guidelines, Worksheets, Contacts, References, and Credits.
- •Worksheet/Outlining. The approach supports worksheet/outlining using the drafting of Descriptions,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

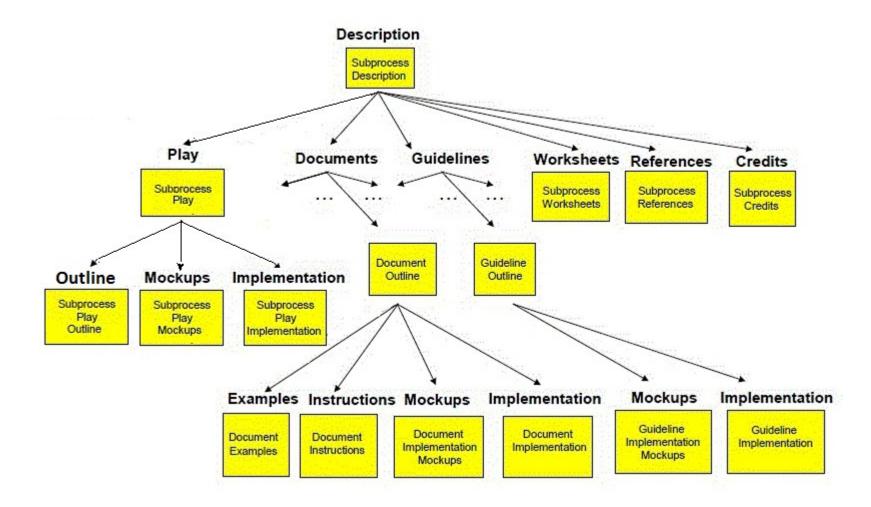
# Process Libraries are organized by subprocesses.



# View Tools show how organizations view their subprocesses.

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|   |                     |
| Total 11 Entries  |                     |
| Classification: Product Realization Subprocesses (T4-00-00-00)                            |                     |
| Subprocess: Designing Directives (T4-3-00-00)   |                     |
| Create View   |                     |
| View  | Steps               |
| ARC Directives Office-  | Update              |
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| DFRC Directives Office<br>Bogue, Rodney (rod.bogue@nasa.gov)                              | Update<br>Copy      |
| bugue, Kouney (lou.bugue@nasa.gov)  | Delete              |
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| Kim, Walter S. (walter.s.kim@nasa.gov)  | Copy                |
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# Subprocess View Tools contain the envelope of related files.



### **Descriptions summarize subprocesses.**

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| Designing Directives   | <u> </u>   |
| Table of Contents  |            |
| 1. Overview         2. Play         3. Documents         4. Guidelines         5. Others   |            |
| 1. Overview  |            |
| In this subprocess, we deal with the process of Designing Directives. This is where Projects design, build, and test their Directives. |            |
| Organization: ORG  |            |
| <u>All-Files</u> . These are all the view files.<br><u>Benefits</u>  |            |
| 2. Play  |            |
| In this subprocess, the play is divided in several parts:  | ▼<br>at: { |

### Plays describe subprocess execution.

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### **Documents describe subprocess data.**

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| 7. Analysis. This is where reports are generated.   |                      |
|   |                      |
| 3. Documents  |                      |
| 5. Documents  |                      |
| In this subprocess, we have the following document types:   |                      |
| in this subprocess, we have the following document types.   |                      |
| Demonstration Tools. These are used to represent the Demonstration Tools.                                     |                      |
| Directives Contract. These are used to represent the Directives Contract.                                     |                      |
| Process Library. These are used to represent the Process Library.   |                      |
| Implementation Plans. These are used to represent the Implementation Plans.                                   |                      |
| Directives Designs. These are used to represent the Directives Designs.                                       |                      |
| Directives Designs Reviews. These are used to represent the Directives Designs Review.                        |                      |
| Directives Builds. These are used to represent the Directives Builds.   |                      |
| Directives Builds Reviews. These are used to represent the Directives Builds Reviews.                         |                      |
| Directives Tests. These are used to represent the Directives Tests.   |                      |
| Directives Tests Reviews. These are used to represent the Directives Tests Reviews.                           |                      |
|   |                      |
|   |                      |
| 4. Guidelines   |                      |
|   |                      |
| In this subprocess, we have the following roles:  |                      |
|   |                      |
| Designing Directives Manager. This is the person managing the Designing Directives subprocess.                |                      |
| Project Manager. This is the person managing the Project.   |                      |
| Demonstration Tools Developer. This is the person managing the Demonstration Tools Development.               |                      |
| Customer. This is the customer for the Directives.  |                      |
| Business Manager. This is the person managing the procurements for the .Development Facility                  |                      |
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### Guidelines describe user subprocesses.

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| 4. Guidelines  |                |
| In this subprocess, we have the following roles:   |                |
| Designing Directives Manager. This is the person managing the Designing Directives subprocess.                         |                |
| Project Manager. This is the person managing the Project.  |                |
| Demonstration Tools Developer. This is the person managing the Demonstration Tools Development.                        |                |
| Customer. This is the customer for the Directives.   |                |
| Business Manager. This is the person managing the procurements for the .Development Facility                           |                |
| Directives Designers. This is the person managing the Directives designs   |                |
| Directives Designs Reviewers. This is the person reviewing the Directives designs                                      |                |
| Directives Builders. This is the person building the Directives  |                |
| Directives Builds Reviewers. This is the person reviewing the Directives.  |                |
| Directives Testers. This is the person testing the Directives  |                |
| Directives Tests Reviewers. This is the person reviewing the testing of the Directives                                 |                |
| Organization Manager. This is the person managing the Organization.  |                |
| Overall Organizations Manager. This is the person managing the overall Organizations.                                  |                |
|  |                |
| 5. Others  |                |
| In this subprocess, we have the following other tools:   |                |
| Worksheet. This is the guidelines for the manager/director.  |                |
| Credits. These are the people partaking in this organization's production.   | -              |
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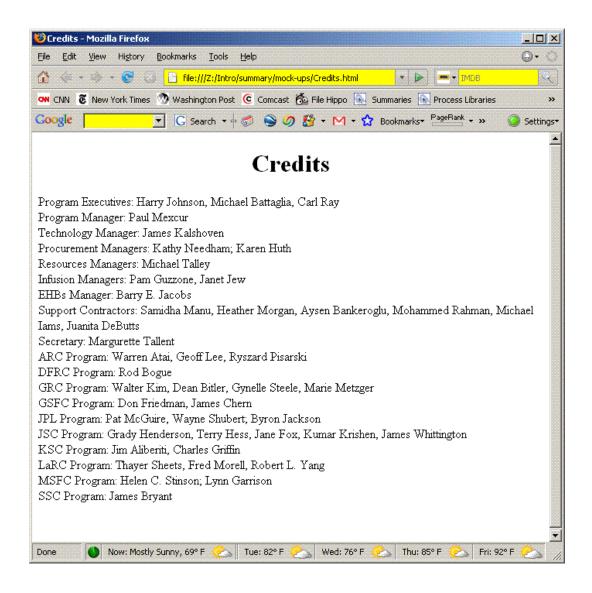
## Subprocess Worksheets facilitate subprocess manager communication with process developers and participants.

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| •                              | <b>Designing Directives</b><br>ose of this subprocess is to manage Direc<br>FC Directives Office          |  | oproo            | cess W             | /orksh             | eet   |  |                                      |                                 |                              |  |  |
|                                |   |  |                  | Estimated          | Actual             |   |  | Document                             | łs                              |                              |  |  |
| Task                           | Purpose   | Suggested Roles  | Task<br>Lead(s)  | Completion<br>Date | Completion<br>Date | Document  | Instructions<br>and Samples                                | Document<br>Lead(s)                  | Estimated<br>Completion<br>Date | Actual<br>Completion<br>Date | Document<br>Location(s)                  |  |
| Administration                 | The purpose of this task is to<br>administer the design of Integrated<br>Problems and Solutions Database. | Procurement Manager, Contracting Officer,<br>Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>Avardee,<br>Advisor,<br>Program Manager/Program Executive,<br>Mission Directorate Representative,<br>Topic Manager,<br>Subtopic Manager, Field Center Program<br>Manager,<br>Technology Infusion Manager,<br>Budget Personnel | Helen<br>Stinson | 07/23/07           | 08/23/07           | Document Library<br>(Engineering)   | Instructions and<br>Samples                                | Helen<br>Stinson                     | 06/23/07                        | 07/23/07                     | Library:<br>NS2034                       |  |
|                                | The purpose of this task is to plan the   | Procurement Manager, Contracting Officer,<br>Contract Specialist, Procurement<br>Reviewer,<br>COTR,<br>JPL Technical Monitor,<br>Avandee,  | Helen            |                    |                    | Planning Document<br>(Bngineering)<br>Draft Project<br>Requirements<br>Document | Instructions and<br>Samples<br>Instructions and<br>Samples | Helen<br>Stinson<br>Helen<br>Stinson | 06/23/07<br>06/23/07            | 07/23/07                     | Library:<br>NS2034<br>Library:<br>NS2034 |  |
| Planning                       | design of Integrated Problems and<br>Solutions Database.  | Advisor,<br>Program Manager/Program Executive,<br>Mission Directorate Representative, Topic<br>Manager, Subtopic Manager, Field Center<br>Program Manager,   | Stinson          | 06/23/07           | 06/23/07           | (Engineering)<br>Project Plan<br>(Engineering)                                  | Instructions and<br>Samples                                | Helen<br>Stinson                     | 06/23/07                        | 07/23/07                     | Library:<br>NS2034                       |  |
|                                |   | Technology Infusion Manager,<br>Budget Personnel   |                  |                    |                    | Document Library  | Instructions and   | Helen                                | 06/23/07                        | 07/23/07                     | Library:                                 |  |

#### **References list other related resources.**

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|                                 | References   |                                  |                 |
|                                 | iterefences  |                                  |                 |
| Program/Project On-Line Libr    | ary and Resource Information Sustm (Polaris)                           |                                  |                 |
| NPR 7120.5D (NODIS)             |  |                                  |                 |
| Templates:                      |  |                                  |                 |
| NPR 7123.1A (NODIS)             |  |                                  |                 |
| Program Plan                    |  |                                  |                 |
| Program Life Cycle Diagram      |  |                                  |                 |
| Project Plan                    |  |                                  |                 |
| Project Life Cycle Diagram      |  |                                  |                 |
| Formulation Authorization Doc   |  |                                  |                 |
| Program Gate Products           |  |                                  |                 |
|                                 |  |                                  |                 |
| Program Commitment Agreemer     | <u>n</u>   |                                  |                 |
| Project Gate Products           |  |                                  |                 |
| Changes/Waivers:                |  |                                  |                 |
| Project Categorization          |  |                                  |                 |
| General Waivers                 |  |                                  |                 |
| Key Decision Points             |  |                                  |                 |
| Waivers to NPR 7120.5D          |  |                                  |                 |
| Technical Authority             |  |                                  |                 |
| Waiver Form                     |  |                                  |                 |

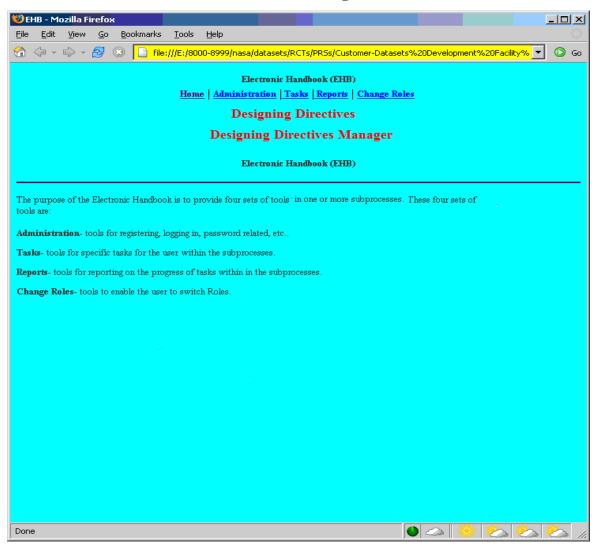
### Credits acknowledge people's contributions.



# Integration Tools facilitate subprocess integration.

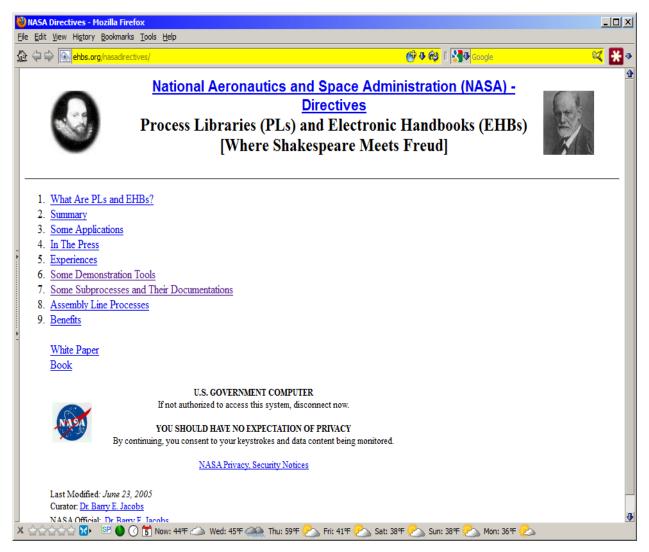
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| Title  | Subprocess Manager   |                     |
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| Integration Url  | Fetch  |                     |
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| Date Created   | 03-MAY-2005  |                     |
| Date Updated   | 18-MAY-2005  |                     |
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|  | Samples From Views   |                     |
| ARC Directives Office                                  | Date Created: 23-Jun-2005  |                     |
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| KSC Directives Office                                  | Date Created: 23-Jun-2005  |                     |

# Electronic Handbooks (EHBs) facilitate the execution of subprocesses.

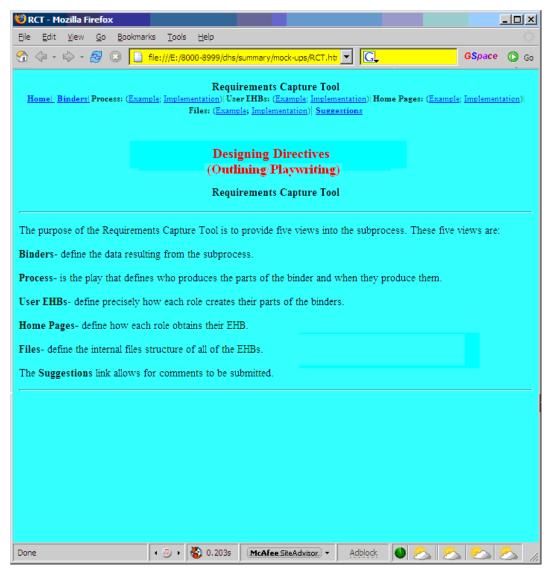


## Demonstration Tools introduce the concepts to

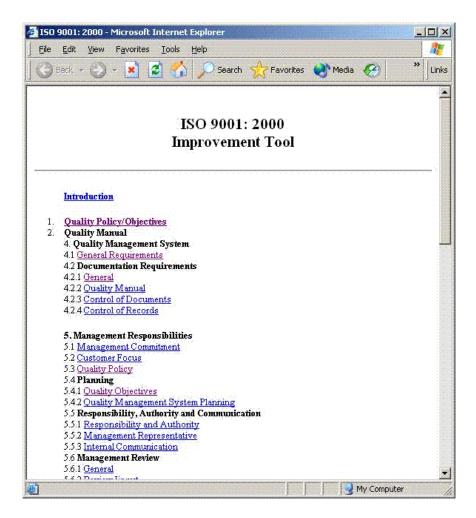
#### a community in their terms.



# Requirements Capture Tools (RCTs) facilitate subprocess development.

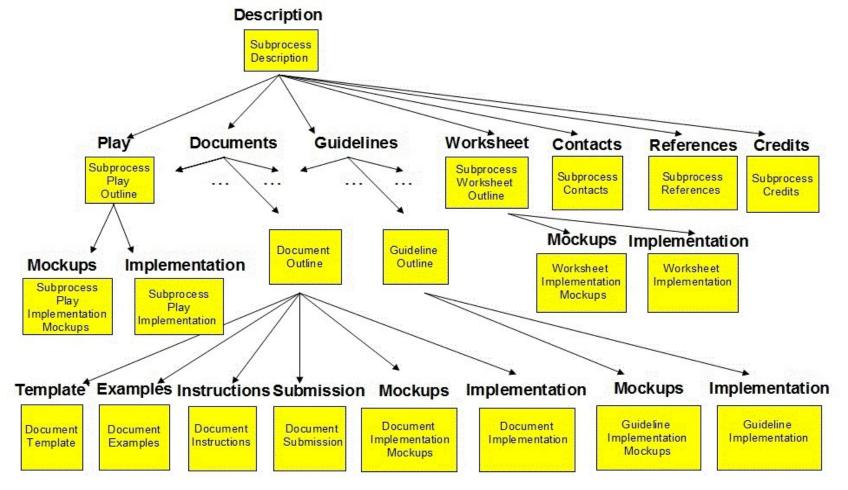


# Improvement Tools facilitate subprocess improvement.

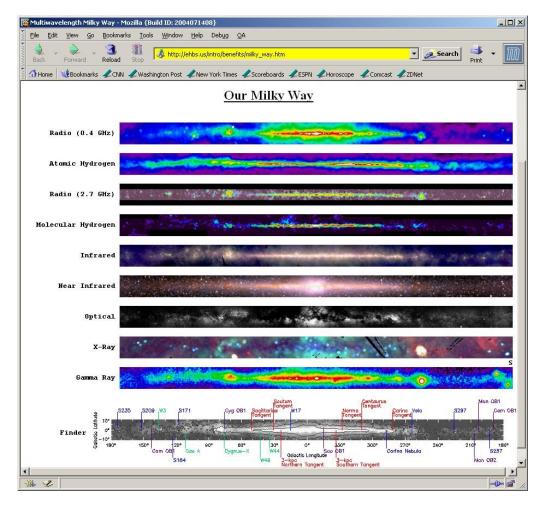


# **Final Thoughts**

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



## 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**

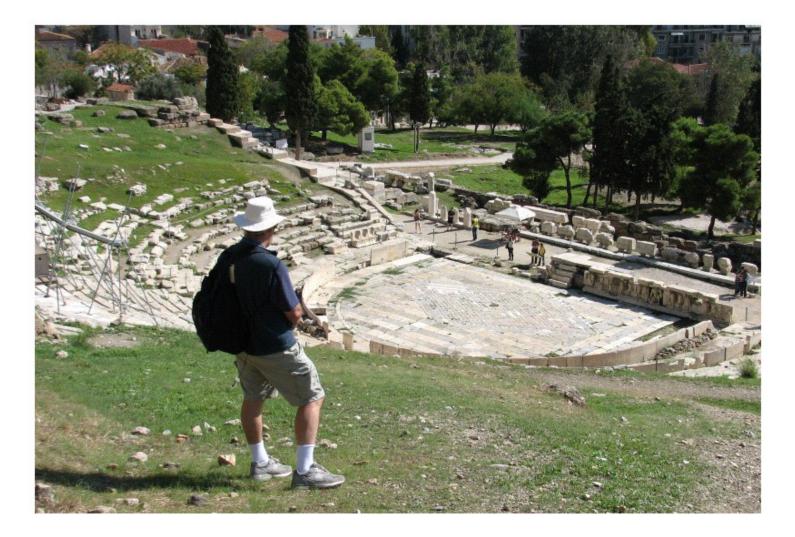
"Men hate each other because they fear each other;

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**



### **For More Details**

