NMFS FIS ER
E-signature Project

Project Summary Brief

February 2009

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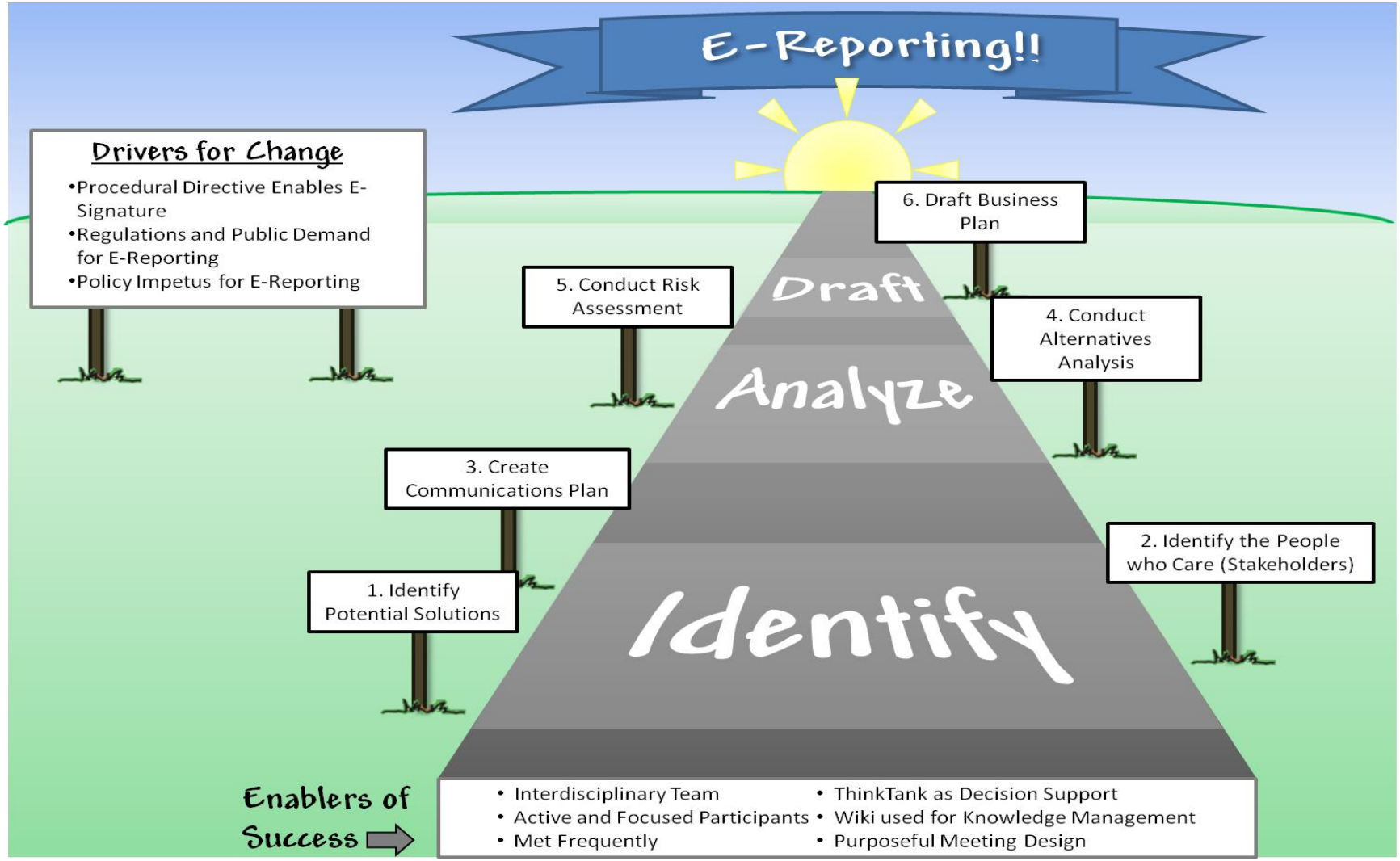
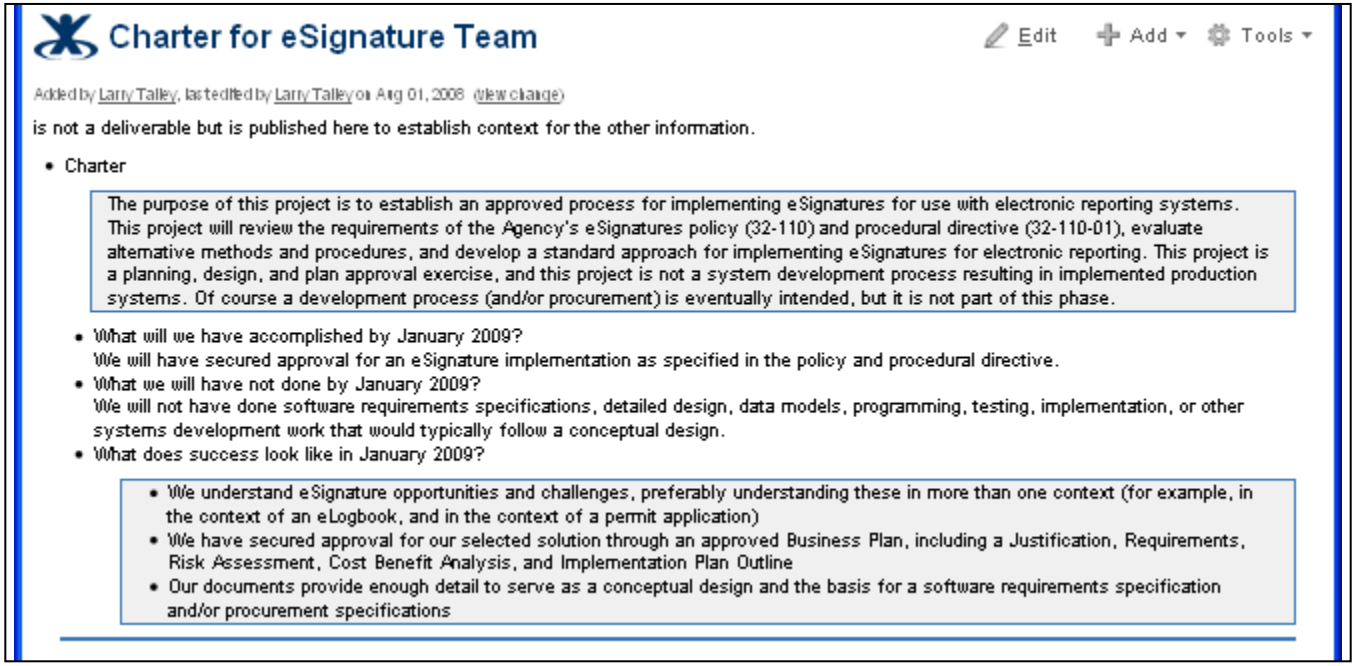
E-signature Team Procedural Directive Roadmap



E-signature Team Charter

- .../esig/Charter+for+eSignature+Team



Charter for eSignature Team

Edit Add Tools

Added by Larry Talley, last edited by Larry Talley on Aug 01, 2008 (view change)

is not a deliverable but is published here to establish context for the other information.

- Charter

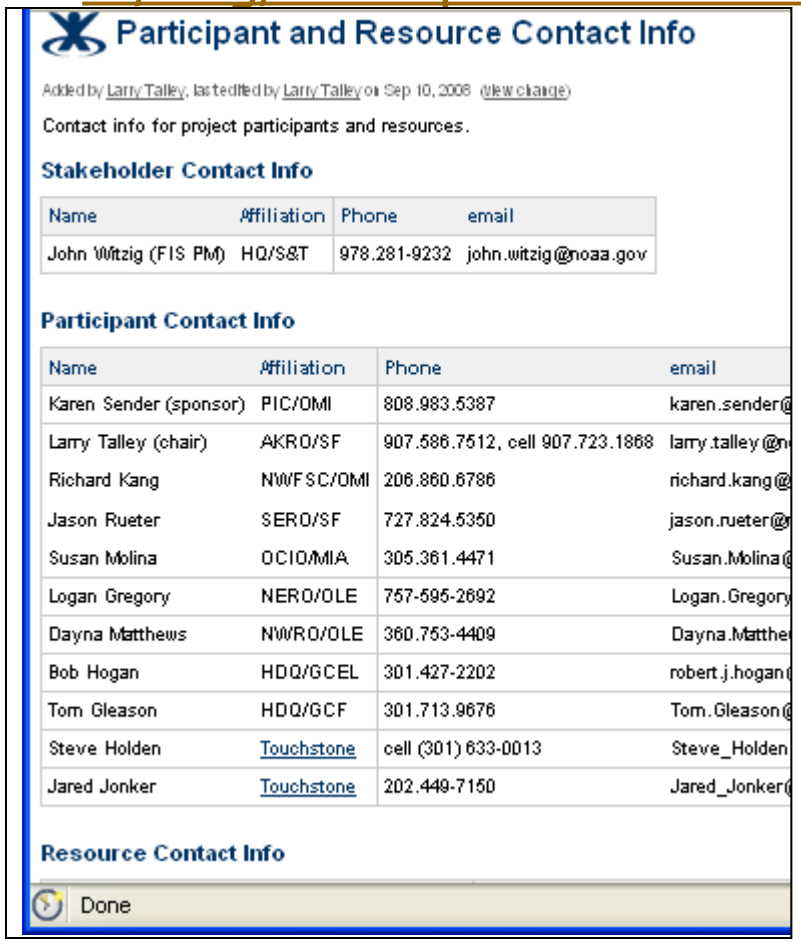
  The purpose of this project is to establish an approved process for implementing eSignatures for use with electronic reporting systems. This project will review the requirements of the Agency's eSignatures policy (32-110) and procedural directive (32-110-01), evaluate alternative methods and procedures, and develop a standard approach for implementing eSignatures for electronic reporting. This project is a planning, design, and plan approval exercise, and this project is not a system development process resulting in implemented production systems. Of course a development process (and/or procurement) is eventually intended, but it is not part of this phase.

  - What will we have accomplished by January 2009?
    We will have secured approval for an eSignature implementation as specified in the policy and procedural directive.
  - What we will have not done by January 2009?
    We will not have done software requirements specifications, detailed design, data models, programming, testing, implementation, or other systems development work that would typically follow a conceptual design.
  - What does success look like in January 2009?

    - We understand eSignature opportunities and challenges, preferably understanding these in more than one context (for example, in the context of an eLogbook, and in the context of a permit application)
    - We have secured approval for our selected solution through an approved Business Plan, including a Justification, Requirements, Risk Assessment, Cost Benefit Analysis, and Implementation Plan Outline
    - Our documents provide enough detail to serve as a conceptual design and the basis for a software requirements specification and/or procurement specifications

E-signature Team Composition

- .../esig/Participant+and+Resource+Contact+Info



Participant and Resource Contact Info

Added by Larry Talley, last edited by Larry Talley on Sep 10, 2008 (view change)

Contact info for project participants and resources.

Stakeholder Contact Info

Name	Affiliation	Phone	email
John Witzig (FIS PM)	HQ/S&T	978.281-9232	john.witzig@noaa.gov

Participant Contact Info

Name	Affiliation	Phone	email
Karen Sender (sponsor)	PIC/OMI	808.983.5387	karen.sender@
Larry Talley (chair)	AKRO/SF	907.586.7512, cell 907.723.1868	larry.talley@n
Richard Kang	NWFSC/OMI	206.860.6786	richard.kang@
Jason Rueter	SERO/SF	727.824.5350	jason.rueter@
Susan Molina	OCIO/MIA	305.361.4471	Susan.Molina@
Logan Gregory	NERO/OLE	757-595-2692	Logan.Gregory
Dayna Matthews	NWRO/OLE	360.753-4409	Dayna.Matthe
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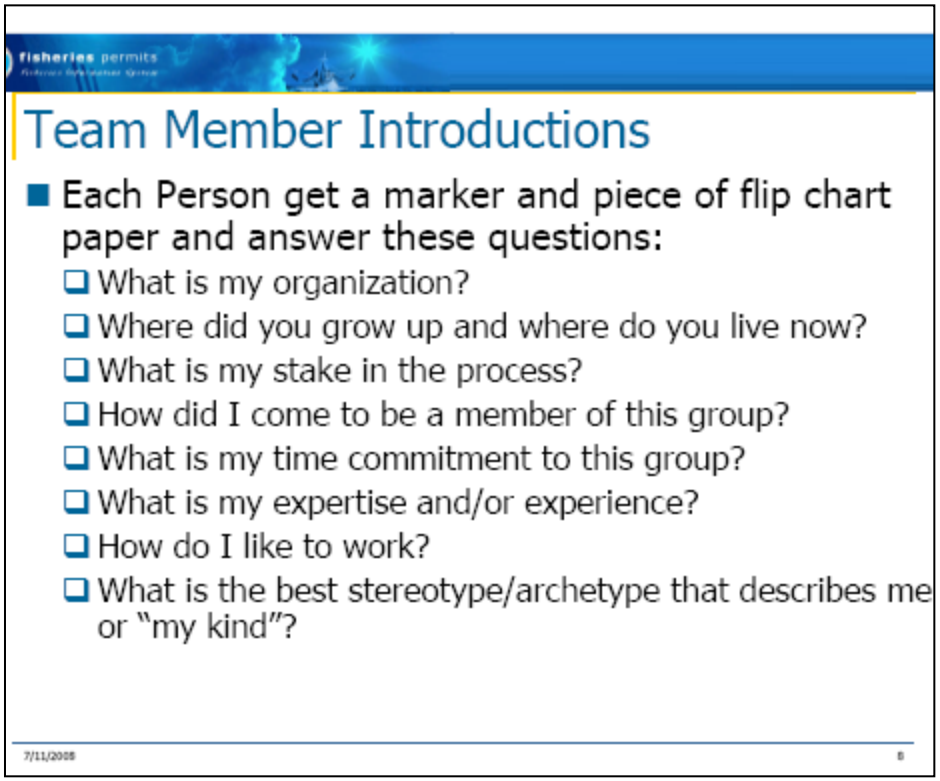
Tom Gleason	HDQ/GCF	301.713.9676	Tom.Gleason@
Steve Holden	Touchstone	cell (301) 633-0013	Steve_Holden
Jared Jonker	Touchstone	202.449-7150	Jared_Jonker(

Resource Contact Info

Done



fisheries permits

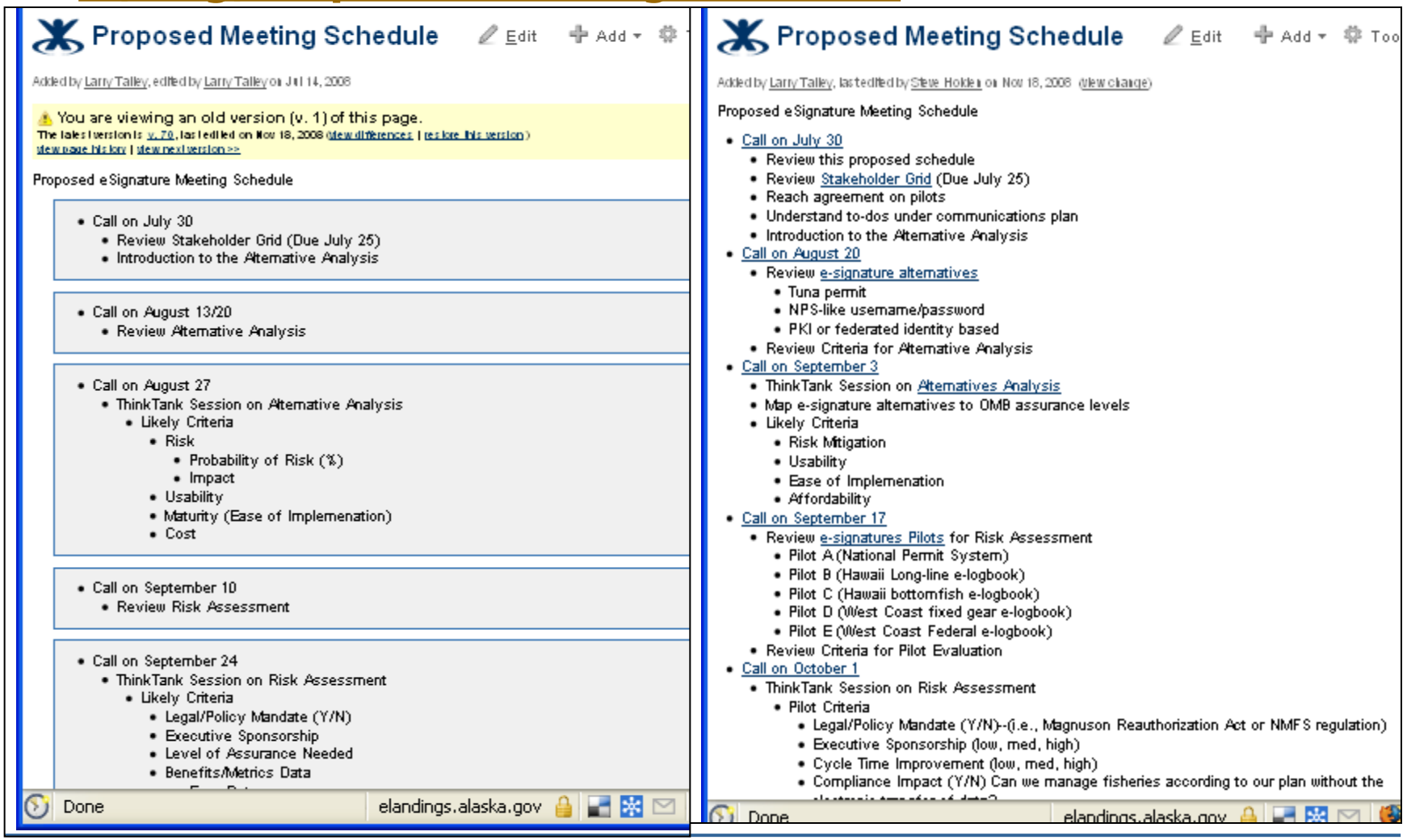
Team Member Introductions

- Each Person get a marker and piece of flip chart paper and answer these questions:
  - What is my organization?
  - Where did you grow up and where do you live now?
  - What is my stake in the process?
  - How did I come to be a member of this group?
  - What is my time commitment to this group?
  - What is my expertise and/or experience?
  - How do I like to work?
  - What is the best stereotype/archetype that describes me or "my kind"?

7/11/2008

NMFS E-signature Project Timeline

- **.../esig/Proposed+Meeting+Schedule**



Proposed Meeting Schedule

Edit Add

Added by Larry Talley, edited by Larry Talley on Jul 14, 2008

You are viewing an old version (v. 1) of this page.
The latest version is v. 20, last edited on Nov 18, 2008 (view differences | restore this version)
view page history | view next version >>

Proposed eSignature Meeting Schedule

- Call on July 30
  - Review Stakeholder Grid (Due July 25)
  - Introduction to the Alternative Analysis
- Call on August 13/20
  - Review Alternative Analysis
- Call on August 27
  - ThinkTank Session on Alternative Analysis
    - Likely Criteria
      - Risk
        - Probability of Risk (%)
        - Impact
      - Usability
      - Maturity (Ease of Implemenation)
      - Cost
- Call on September 10
  - Review Risk Assessment
- Call on September 24
  - ThinkTank Session on Risk Assessment
    - Likely Criteria
      - Legal/Policy Mandate (Y/N)
      - Executive Sponsorship
      - Level of Assurance Needed
      - Benefits/Metrics Data

Done elandings.alaska.gov

Proposed Meeting Schedule

Edit Add Too

Added by Larry Talley, last edited by Steve Holden on Nov 18, 2008 (view change)

Proposed eSignature Meeting Schedule

- Call on July 30
  - Review this proposed schedule
  - Review Stakeholder Grid (Due July 25)
  - Reach agreement on pilots
  - Understand to-dos under communications plan
  - Introduction to the Alternative Analysis
- Call on August 20
  - Review e-signature alternatives
    - Tuna permit
    - NPS-like username/password
    - PKI or federated identity based
  - Review Criteria for Alternative Analysis
- Call on September 3
  - ThinkTank Session on Alternatives Analysis
  - Map e-signature alternatives to OMB assurance levels
  - Likely Criteria
    - Risk Mitigation
    - Usability
    - Ease of Implemenation
    - Affordability
- Call on September 17
  - Review e-signatures Pilots for Risk Assessment
    - Pilot A (National Permit System)
    - Pilot B (Hawaii Long-line e-logbook)
    - Pilot C (Hawaii bottomfish e-logbook)
    - Pilot D (West Coast fixed gear e-logbook)
    - Pilot E (West Coast Federal e-logbook)
  - Review Criteria for Pilot Evaluation
- Call on October 1
  - ThinkTank Session on Risk Assessment
    - Pilot Criteria
      - Legal/Policy Mandate (Y/N)--(i.e., Magnuson Reauthorization Act or NMFS regulation)
      - Executive Sponsorship (low, med, high)
      - Cycle Time Improvement (low, med, high)
      - Compliance Impact (Y/N) Can we manage fisheries according to our plan without the

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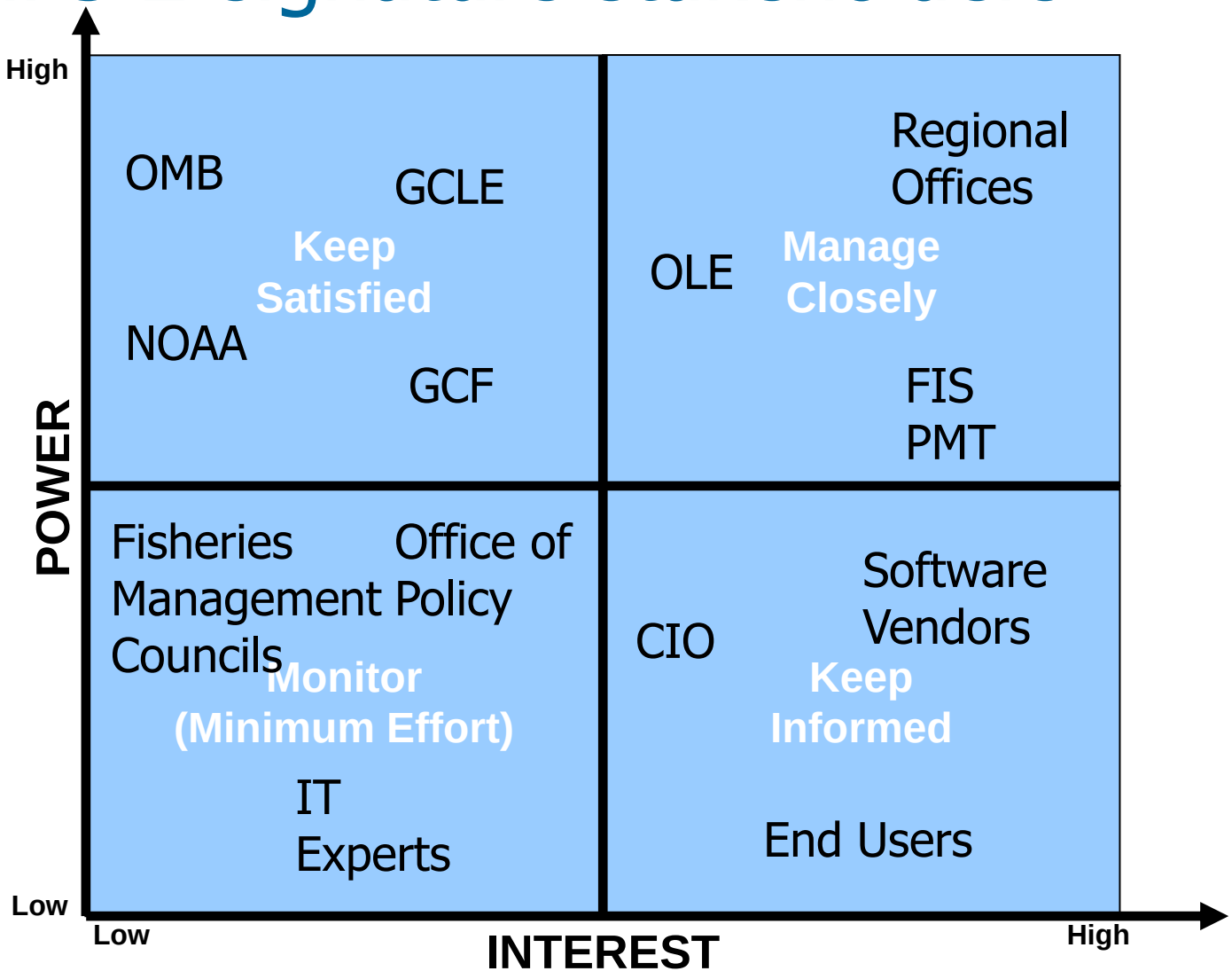
NMFS E-signature stakeholders

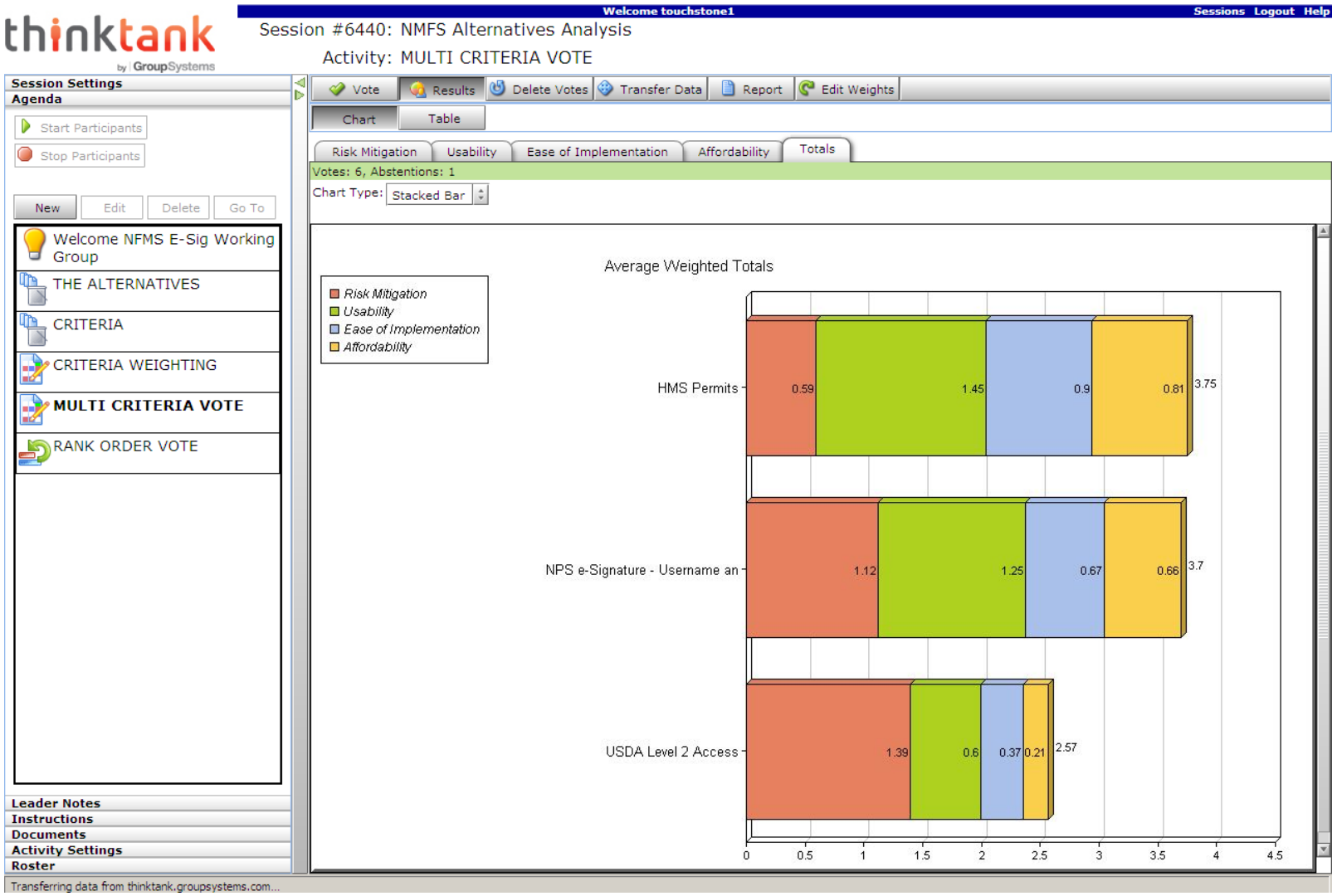


Five Step Process for Determining Desired Assurance Level (OMB Policy)

First two steps are the primary focus for the process the NMFS e-signature team used

- Conduct risk assessment
- Map identified risks to assurance level
- Select technology based on NIST technical guidance
- Validate that implemented system has achieved desired assurance level
- Periodically reassess system to assure solution produces desired assurance.

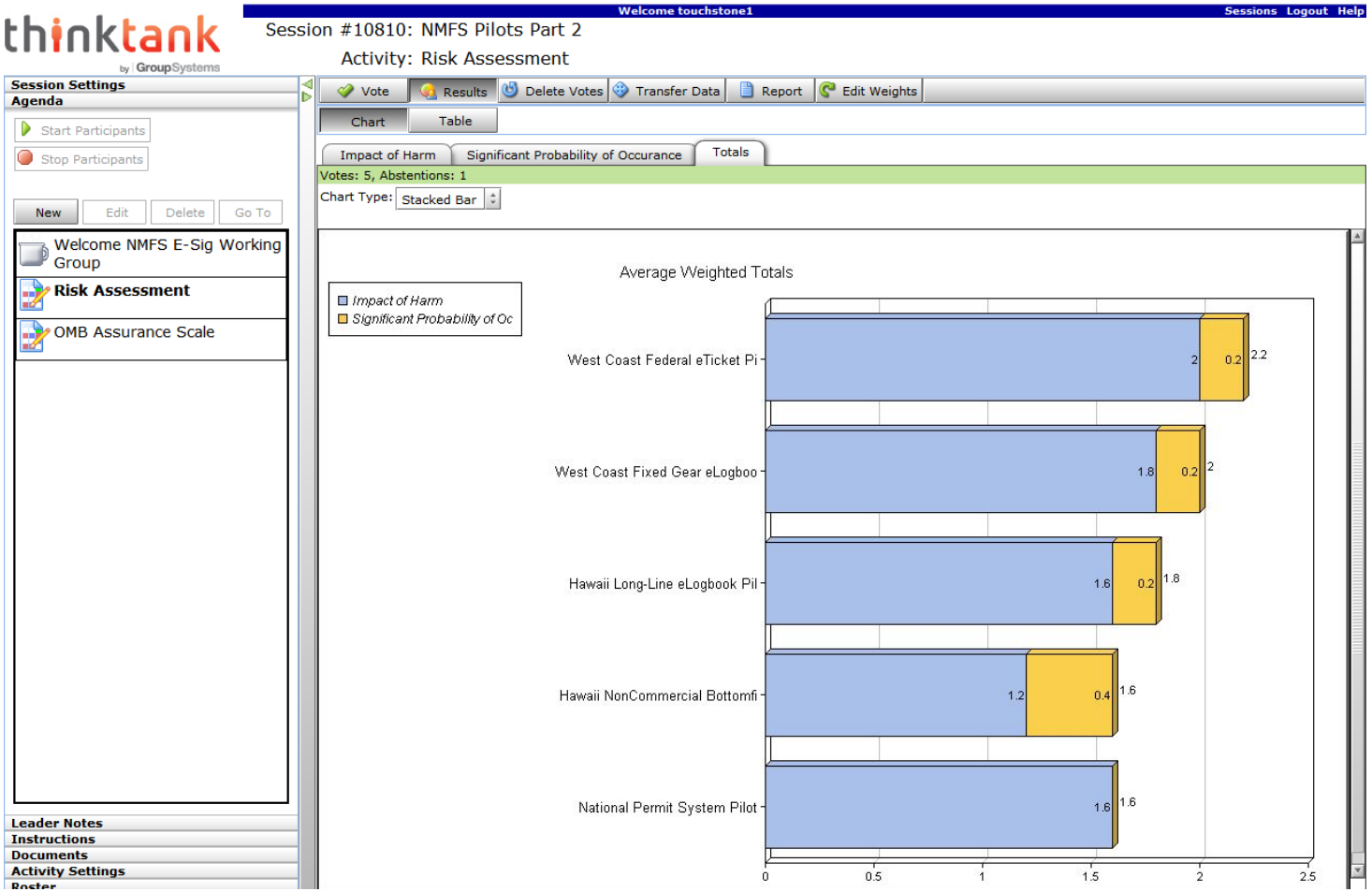
Alternatives Analysis for E-signature Choices



Results--Risk Assessments for each NMFS E-signature pilot

- The team ran five pilots through the risk assessment process required by the procedural directive:
  - Hawaii Longline Logbook (example to follow)
  - Hawaii Non-Commercial Bottomfish Logbook
  - National Permit System
  - West Coast Federal Fixed Gear eLogbook
  - West Coast E-fishticket
- The team piloted the implementation of the procedural directive in two ways
  - Validated the approach by running the National Permit System (NPS) business plan through the risk assessment framework
  - Built on the NPS validation of the framework to create a template for business plans using the Hawaii Longline Logbook as a pilot

Risk Analysis Results in Thinktank



NIST Special Publication 800-63:
Electronic Authentication Guideline

Appropriate OMB Assurance Level to Mitigate Business Risk

Lowest Assurance Level that Mitigates All Impact Categories	Mitigating Controls	Appropriate Assurance Level with Consideration of Mitigating Controls	Proposed E-signature Alternative
Level 3---...appropriate for transactions needing high confidence in the asserted identity's accuracy. People may use Level 3 credentials to access restricted web services without the need for additional identity assertion controls.	Multiple sources of information, some with counter-balancing incentives. The VMS system provides independent confirmation of the vessel's location. Mandatory landing reports (fish tickets) provide independent confirmation of retained catch. Vessels reporting are permitted and have an ongoing "trusted relationship" with NMFS. NMFS has established a certification process for e-logbook applications. When certified (trusted) software is capturing and accumulating data locally, and the accumulated data is then transferred on portable media from the vessel to NMFS, there are many fewer vulnerabilities than would exist in a typical online system. Approved e-logbook software solutions are required to contain a unique identifier for each e-logbook installation. Through this unique identifier each logbook submission can be tied to a particular instance of the e-logbook software, and therefore to a particular vessel.	Level 2---On balance, confidence exists that the asserted identity is accurate. Level 2 credentials are appropriate for a wide range of business with the public where agencies require an initial identity assertion (the details of which are verified independently prior to any Federal action).	NPS-like

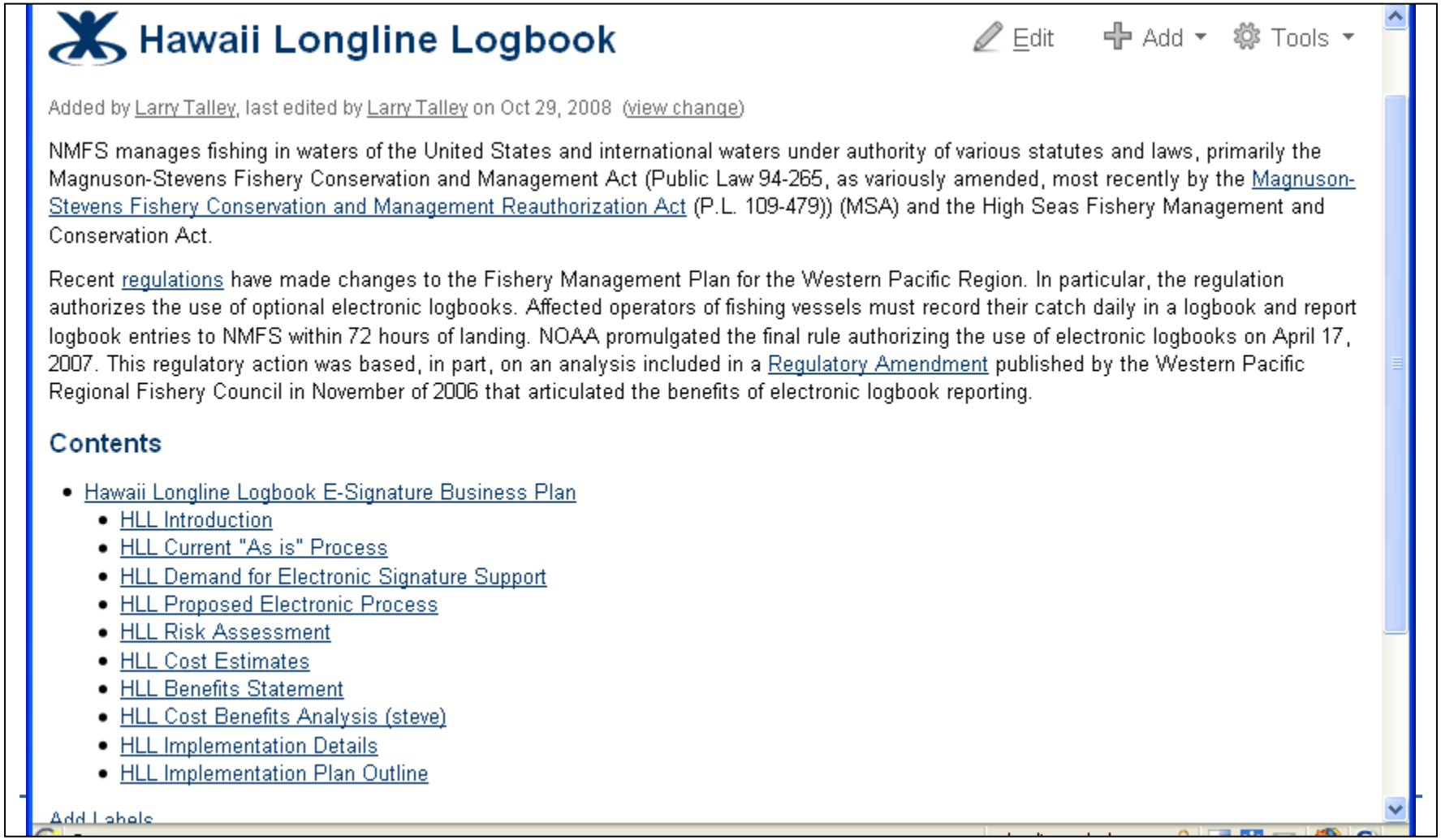
Hawaii Longline Logbook: Risk Assessment

- .../esig/HLL+Risk+Assessment

Vulnerability	Threat-source	Threat Action	Category of Harm	Likelihood of Occurrence	Impact of Harm	E-signature Cost Benefit Assessment
Impersonation in e-logbook transactions	Competitor	Impersonation using stolen identity credentials, with fraudulent reporting of false data to incriminate or defame victim	Inconvenience, distress or damage to standing or reputation	Low: opportunity will be limited because the e-logbook is onboard the vessel at sea and protected by two layers of security controls (access controls on the vessel's computer, and access controls on the e-logbook software)	Low: impersonated parties or agency staff would be likely to notice during dockside interview process and subsequent data review and reconcilation, and when detected, the impact could be effectively mitigated	No net cost or benefit: e-reporting and e-signature provide two layers of security controls (access controls on the vessel's computer, and access controls on the e-logbook software); the traditional paper logbook may have been laying about on the bridge with no security control. However, this may be balanced by the fact that it is easy to understand and mitigate the risk with the traditional paper logbook (the skipper will understand the risk and the potential solutions), while the risks associated with electronic solutions won't be well understood.

Hawaii Longline Logbook: Business Plan

- .../esig/Hawaii+Longline+Logbook+E-Signature+Business+Plan



Hawaii Longline Logbook

Edit Add Tools

Added by Larry Talley, last edited by Larry Talley on Oct 29, 2008 (view change)

NMFS manages fishing in waters of the United States and international waters under authority of various statutes and laws, primarily the Magnuson-Stevens Fishery Conservation and Management Act (Public Law 94-265, as variously amended, most recently by the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (P.L. 109-479)) (MSA) and the High Seas Fishery Management and Conservation Act.

Recent regulations have made changes to the Fishery Management Plan for the Western Pacific Region. In particular, the regulation authorizes the use of optional electronic logbooks. Affected operators of fishing vessels must record their catch daily in a logbook and report logbook entries to NMFS within 72 hours of landing. NOAA promulgated the final rule authorizing the use of electronic logbooks on April 17, 2007. This regulatory action was based, in part, on an analysis included in a Regulatory Amendment published by the Western Pacific Regional Fishery Council in November of 2006 that articulated the benefits of electronic logbook reporting.

Contents

- Hawaii Longline Logbook E-Signature Business Plan
  - HLL Introduction
  - HLL Current "As is" Process
  - HLL Demand for Electronic Signature Support
  - HLL Proposed Electronic Process
  - HLL Risk Assessment
  - HLL Cost Estimates
  - HLL Benefits Statement
  - HLL Cost Benefits Analysis (steve)
  - HLL Implementation Details
  - HLL Implementation Plan Outline

Add Labels

Hawaii Longline Logbook: Implementation Details

- .../esig/HLL+Implementation+Details

HLL Implementation Details

Edit Add Tools

Added by Steve Holden, last edited by Larry Talley on Dec 02, 2008 (view change)

The National Marine Fisheries Service Policy Directive 32-110, "Use and Implementation of Electronic Signatures" outlines the following requirements for an approved electronic signature system:

1. Technical non-repudiation services
2. Legally binding the electronic transaction to an entity
3. Providing chain of custody audit trails
4. Providing an electronic receipt or acknowledgment of a successful submission
5. Collecting only necessary information in the electronic signature authentication process
6. Create a long-term retention and access policy
7. Periodic review and re-evaluation of the electronic signature process

This sections documents design details that address these requirements.

Binding the Transaction to an Entity and Non-repudiation

Requirements 1 and 2 above are addressed in the design of three component parts of the system:

- identity assertion, person proofing, and registration
- terms and conditions and signing ceremony
- document binding and document integrity

The Hawaii Longline Logbook E-signature Evaluation has concluded that OMB Assurance Level 2 (confidence exists in the asserted identity) was appropriate for the Hawaii Longline Logbook. This was a considered decision justified by low likelyhood of occurrence, low and moderate impact of harm, and multiple and strong mitigating controls, including: multiple and sometimes counter-balancing sources of information; permitted entities with an ongoing trusted relationship with NMFS; a rigorous certification process for e-logbook applications; and unique identifiers on each e-logbook submission. Note that the identity is established from association with a fishing permit holder, and

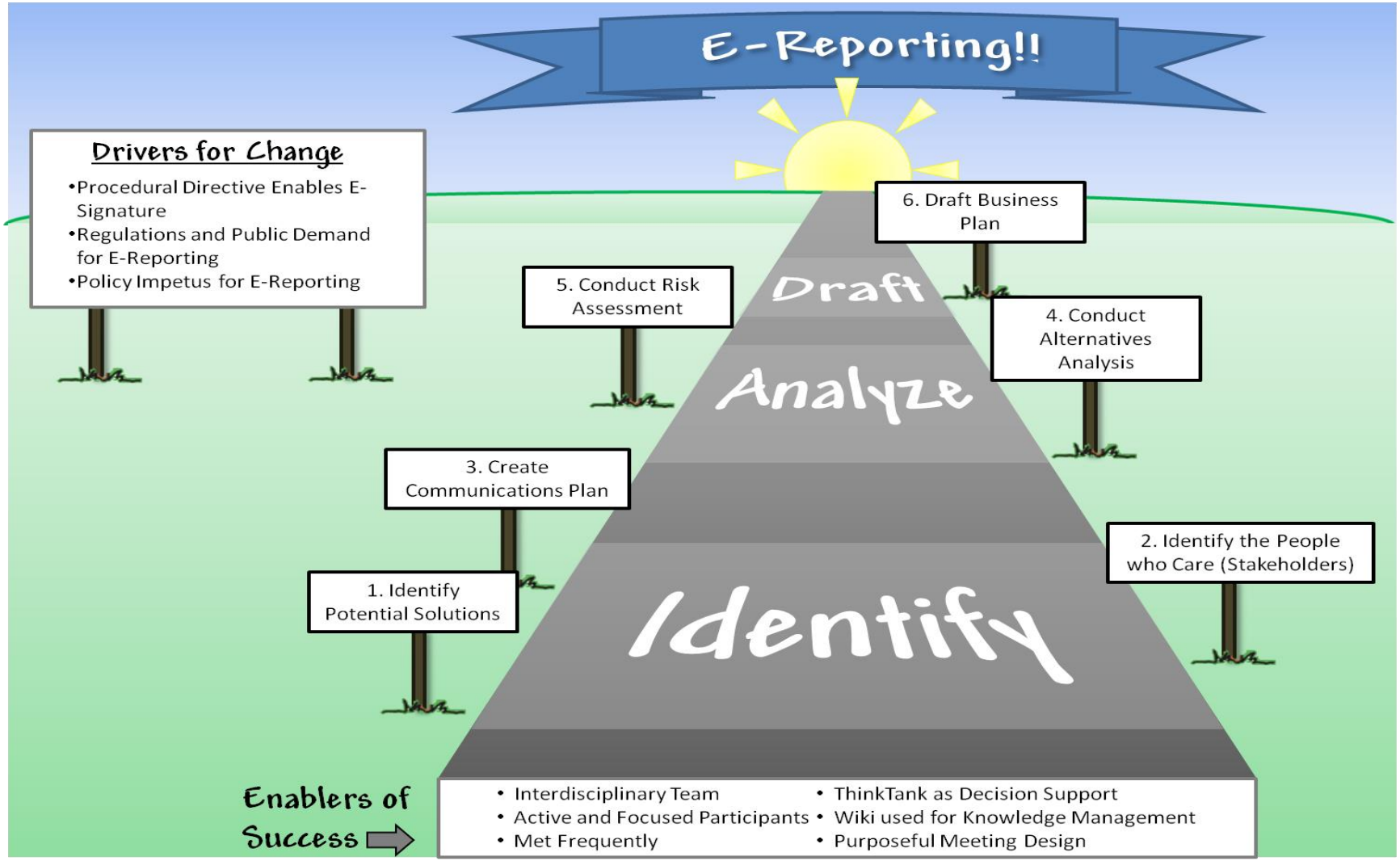
NMFS E-signature Challenges

- Problem domain challenges: e-signature is a broad cross-cutting issue
  - technical concerns
  - legal concerns
  - business process concerns
  - customer service (usability) concerns
  - organizational change concerns
- NMFS formed a cross-disciplinary and geographically dispersed team, which introduced another set of challenges
  - achieving commitment to the team, "buy-in"
  - scheduling across six time zones and different "day job" demands
  - communication and coordination among team members
  - joint authorship and decision-making with a distributed team
  - version control for collaborative work products
  - communication to a diverse set of stakeholders

Response to Challenges

- Held a face-to-face kickoff with explicit focus on achieving buy-in and building trust.
- Used email and a consistent and predictable meeting schedule to address the scheduling challenge.
- Leveraged a wiki for communication and coordination, version control, and communication to stakeholders.
- Also used a decision support application, ThinkTank, with the wiki to address joint authorship and decision-making and to create a repository of actions and outputs.
- The wiki was particularly helpful for stakeholder communication by providing a transparent venue for the broad cross-cutting set of stakeholders to see what was going on.
- Contractor support
  - Domain expertise with e-signatures
  - Domain expertise with facilitating change
  - Decision support using Thinktank
  - Purposeful Meeting Design (face to face and remote design and facilitation)

E-signature Team Procedural Directive Roadmap



Next Steps for NMFS Implementation

- Pilot e-signature draft business plans are close to approval per policy and procedural directives
- Wiki needs to be transitioned from a working collaboration tool to a reference site for future e-signature initiatives
- Projects that follow the process described should be compliant with:
  - the OMB e-auth policy
  - NIST technical guidance
  - NMFS policy
  - NMFS procedural guidance
- Per current understanding of policy and procedure e-signature projects should go through this analysis individually
- With some real-world experience it may be feasible to have a "logbook" business plan and a "fish ticket" business plan, and realize economies of scale in the analysis and conceptual design phases
- While policy and procedure mandates specific risk and cost/benefit assessments, it seems likely that generic software components could be developed and shared ("NPS-like" e-signature web service?)