

Interagency Electronic Reporting

Program Overview



November 8, 2005
Pacific Coast Marine Fisheries Committee Meeting
Portland, Or.

The 'Interagency' who

- Alaska Department of Fish and Game – Commercial Fisheries Division
- International Pacific Halibut Commission
- National Marine Fisheries Service – Alaska Region
 - Sustainable Fisheries
 - Restricted Access Management
- Pacific States Marine Fisheries Commission

INTERAGENCY ELECTRONIC REPORTING

STEERING COMMITTEE MEMBERS

- Project Sponsor - Dave Colpo – PSMFC
- Agency Steering Committee
 - David Ackley NMFS/SF
 - Jessie Gharrett NMFS/RAM
 - Heather Gilroy IPHC
 - Gail Smith ADF&G
- WAI Contractor Sponsor
 - Karen Morgan WAI CEO
 - Chris Keller System Designer
 - Micky Kruse Project Manager/Coordinator

FISHERIES OF ALASKA

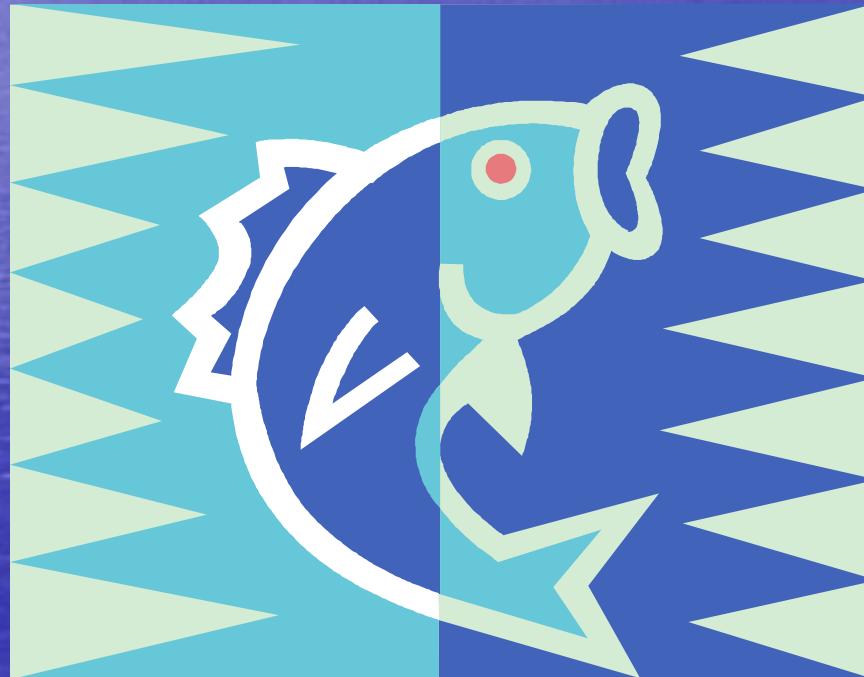
- Large, diverse fisheries with interagency and separate management authorities
 - Halibut
 - Groundfish
 - Shellfish
 - Salmon
 - Herring
- Complex management programs
 - Limited entry fisheries
 - Individual Fishing Quota programs (IFQ)
 - Individual Processor Quota (IPQ) for Rationalized Crab
 - Community Development Quotas (CDQ)
 - Fixed harvest limits (TAC or GHL)

FISHERIES OF ALASKA

- Complex multi-agency license and permit requirements
- Real time debiting requirements for IFQ and IPQ programs.
- Harvester and processor industry represents a diverse group – small to large/"Mom and Pop's" to "State of the Art"
- Fishing and processing occurs in remote areas with limited connectivity.

A new data collection approach

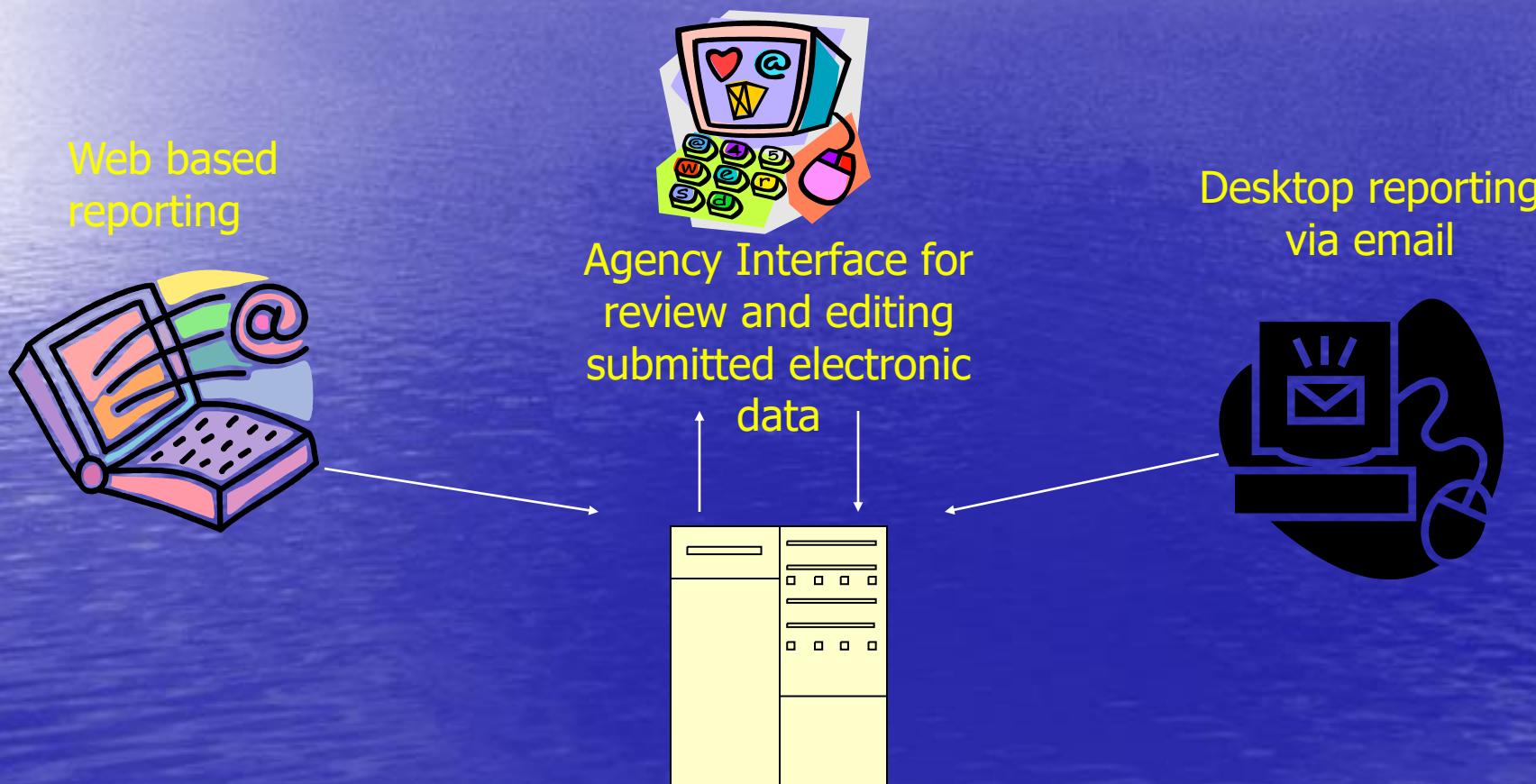
Interagency Electronic Reporting



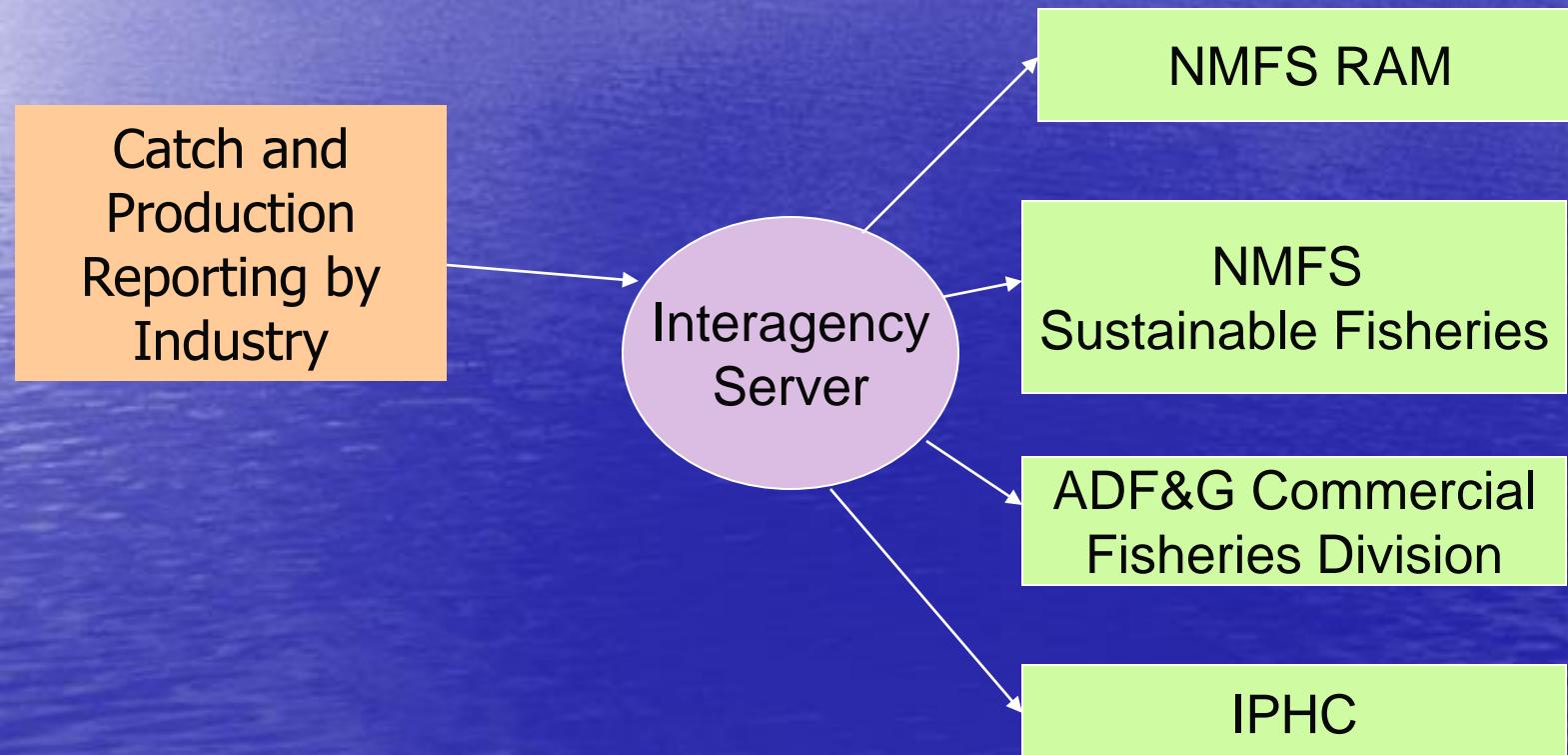
A new data collection approach

Interagency Electronic Reporting

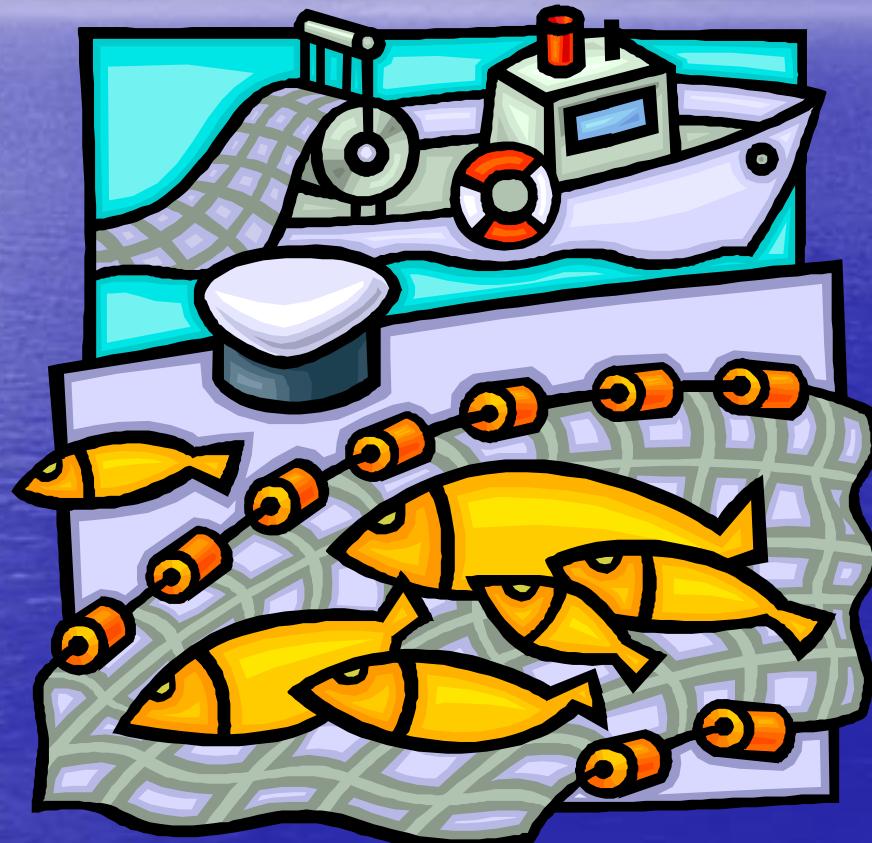
Program Components



A new data collection approach Interagency Web-based Electronic Reporting



eLandings Web Application Demonstration



Interagency Electronic Reporting

Program Goals and Standards

- Provides for one-time entry of commercial fisheries landing data by Processors & Catcher/Processors to Mgmt. Agencies
- Meets the information needs of the Agencies
- Adheres to regulations and confidentiality requirements
- Improves data quality
- Improves data collection methods to reduce redundancy and to consider business constraints of industry
- Provides timely, trip-based commercial catch statistics
- Provides documentation - electronic and paper

Implementation order by fishery

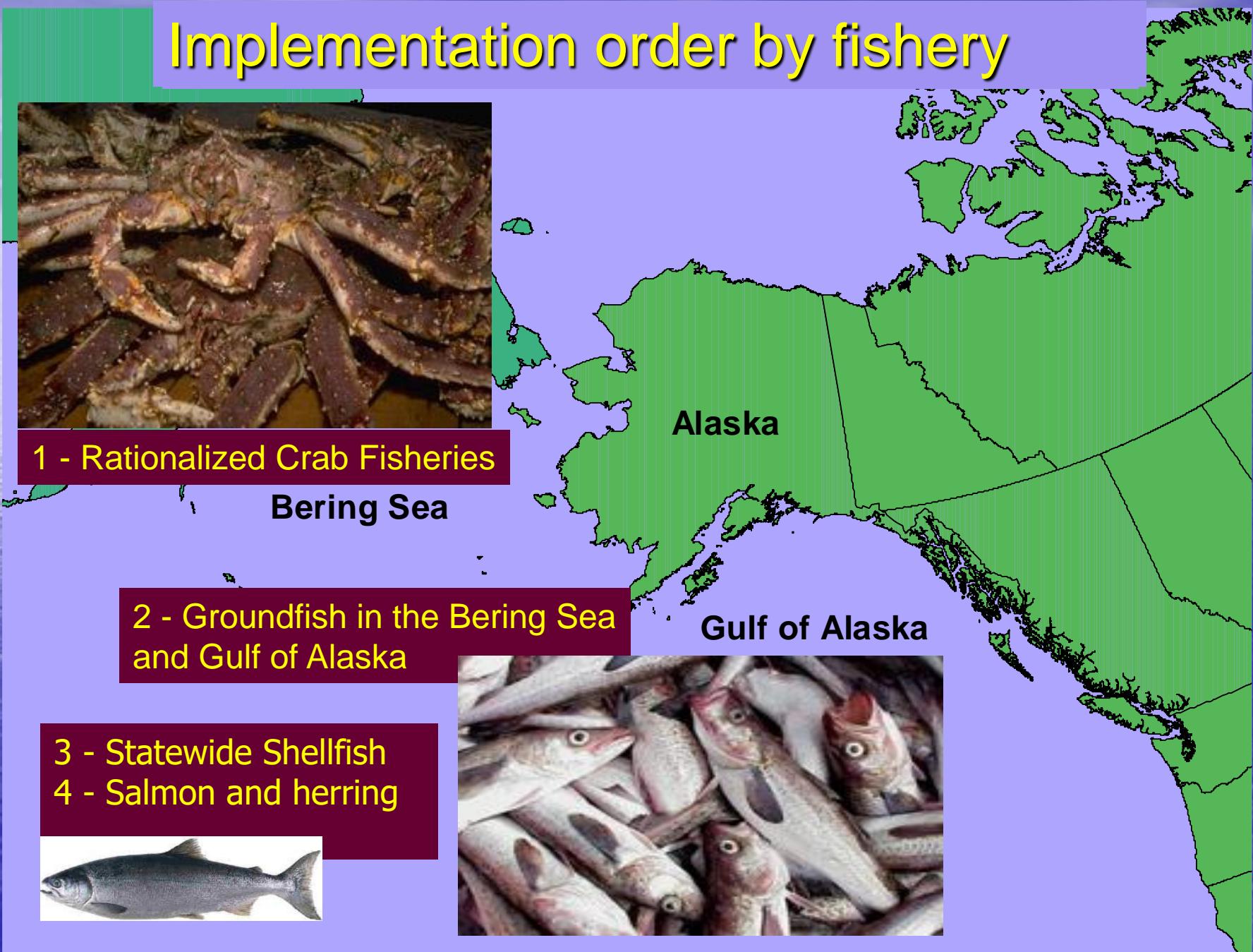


1 - Rationalized Crab Fisheries

Bering Sea

2 - Groundfish in the Bering Sea
and Gulf of Alaska

3 - Statewide Shellfish
4 - Salmon and herring



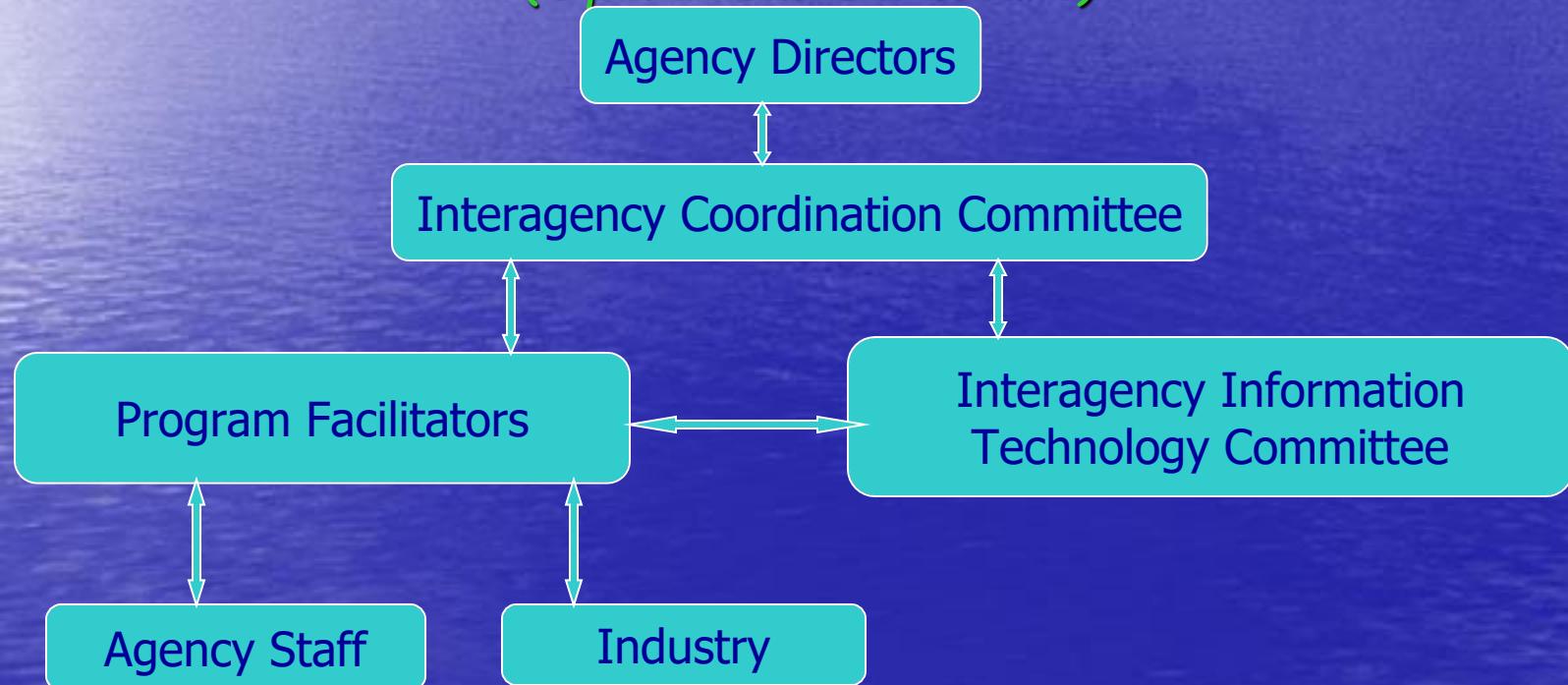
Where We Want To Be The Vision

- Full web-based reporting for all fisheries – *catch and production*
 - Shoreside processors
 - At-sea fleet
 - Catcher processors
 - Motherships
 - Tenders
- Paperless system
 - Electronic signatures
 - Bar-coded permit cards
 - Electronic quota management

INTERAGENCY COOPERATIVE AGREEMENT

Governance Structure

(Operations Structure)



Interagency Electronic Reporting *Operations Planning*

Memorandum of Agreement (MOA)

Purpose

Establish roles and responsibilities

Staffing and budget

- Commitment by Agency Directors for consolidated reporting
- Ensure commitment of agency staff
- Provide framework and program structure
- Agreement on annual program evaluation

Interagency Electronic Reporting Continuing Challenges

- Coordination of program among agencies, including CFEC.
- Coordination of program with oversight authorities
 - Board of Fish
 - North Pacific Fishery Management Council
 - International Pacific Halibut Commission
- Coordination of program with industry
 - Industry Advisory Group
 - Processor field representatives
- Development of increasingly complex entitlement programs

Interagency Electronic Reporting Continuing Challenges

The greatest continuing challenges are:

- Long-term agency commitment
- Long-term adequate funding
- Change management

Lessons Learned During Development

- Prior to the beginning of system design and programming, the agencies worked to align all data coding systems. This facilitated more rapid development.
- The use of Agile Methodology provides a flexible development environment, but requires significant resources for application testing and re-testing.
- We all learn by doing. The development of complex systems always require more resources than initially anticipated. Status reports to upper management are vital.

Lessons Learned During Development

- Agency coordination significantly increases the workload. Identification of staff resources for the short and long – term are critical to avoid burnout.
- Disruption to Seafood Processor's internal operations systems greater than anticipated.
 - ADF&G fish ticket functions as a biological tool and a bill of sale.
 - Staged implementation makes industry modifications difficult.

Lessons Learned During Development

- Agency staffs and contractor developers did not fully appreciate the complexity of the management program until the season began. This led to post-deployment modification of business rules.
- Complex business rules and validation can create some inflexibility for the end user.
- Three significant post-deployment modifications identified for the application. Modular design and web platform facilitate application fixes and deployment.

Lessons Learned During Development

- Full-time internet based reporting systems require a careful assessment of what will be required for user management and support.
- Good relationships with industry fosters an accepting environment and facilitates positive feedback.
- Consultants working with agency programming staff to supervise and mentor has been a very positive production framework.

Program Assessment

The Take Home Message

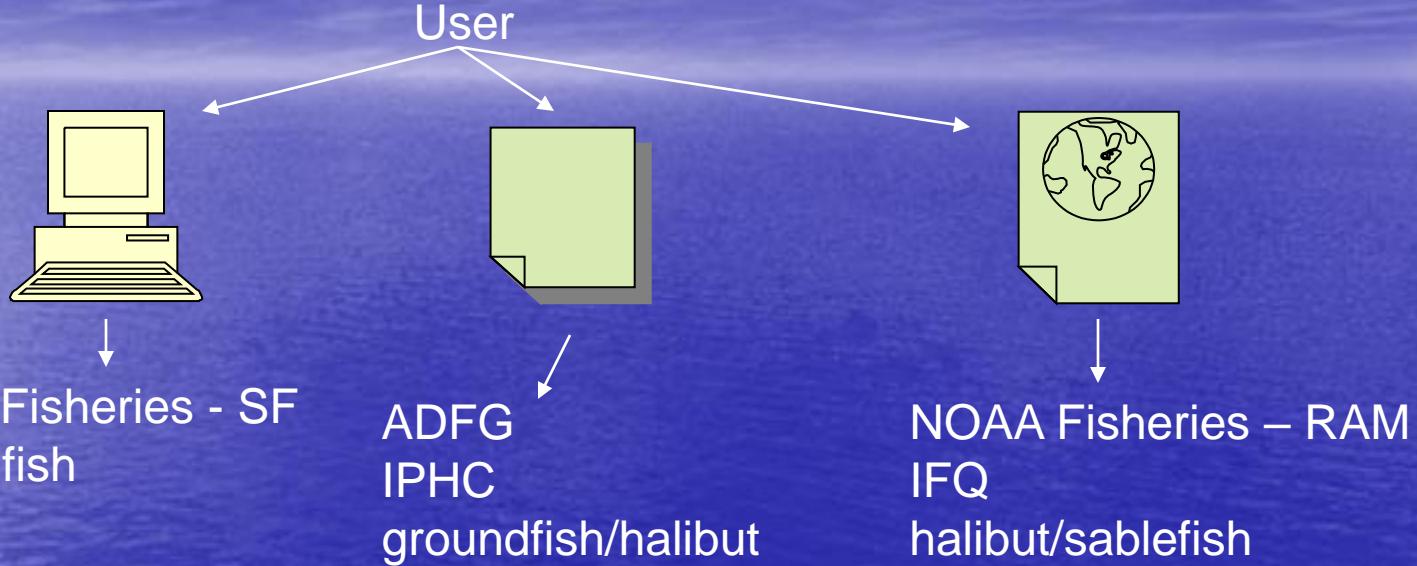
- The Interagency Electronic Reporting System is complex and ambitious.
- When it functions as envisioned, industry loves the System.
- Feedback, generally, has been positive.
- The Rationalized Crab Program is complex irrespective of reporting platform.
- We are 'seeing' the benefits and we are meeting our program goals/standards.

Interagency Electronic Reporting

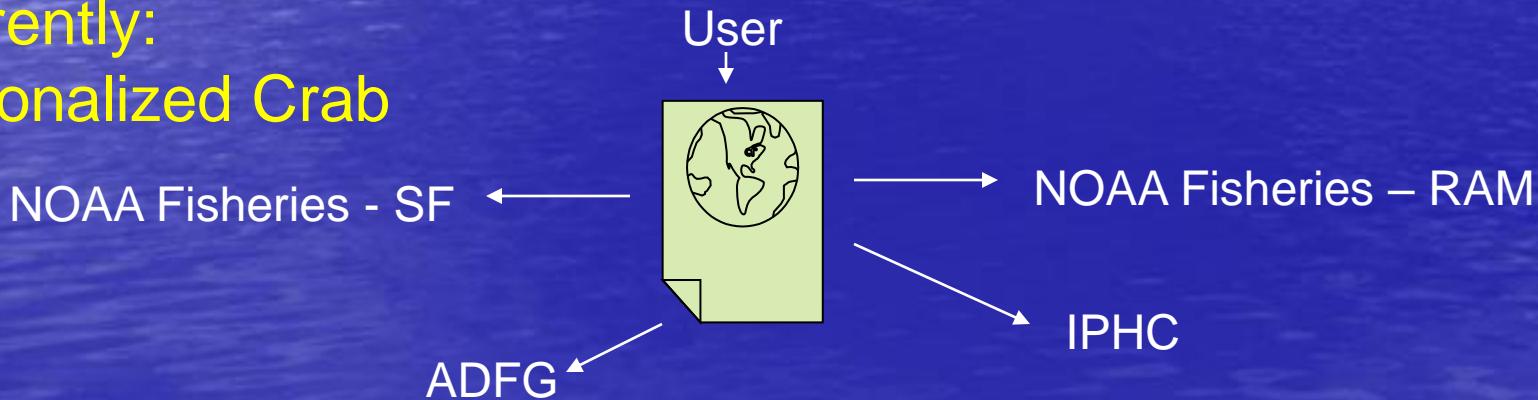
System overview

Existing reporting methods

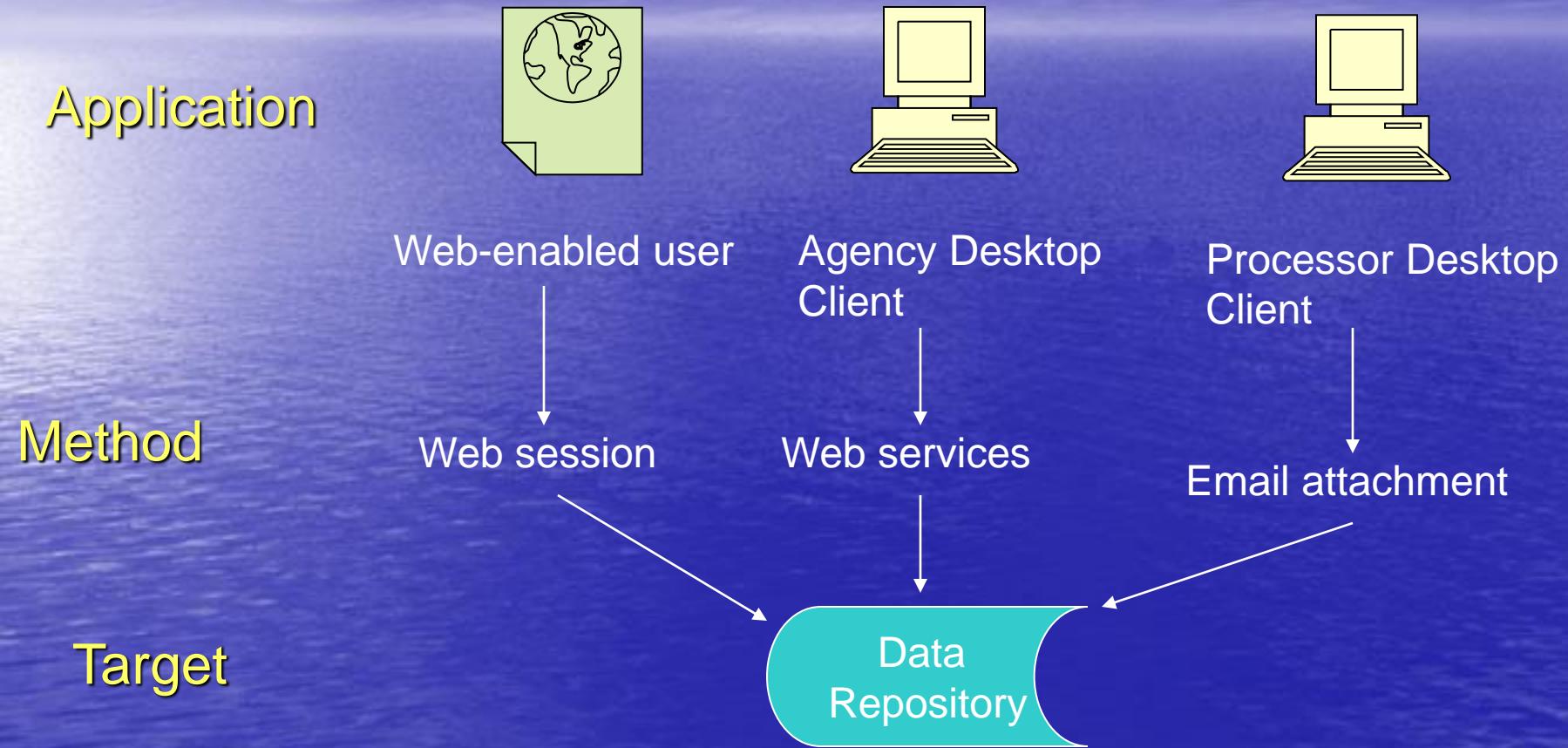
Currently:
Groundfish
and halibut



Currently:
Rationalized Crab



Interagency Electronic Reporting System Access

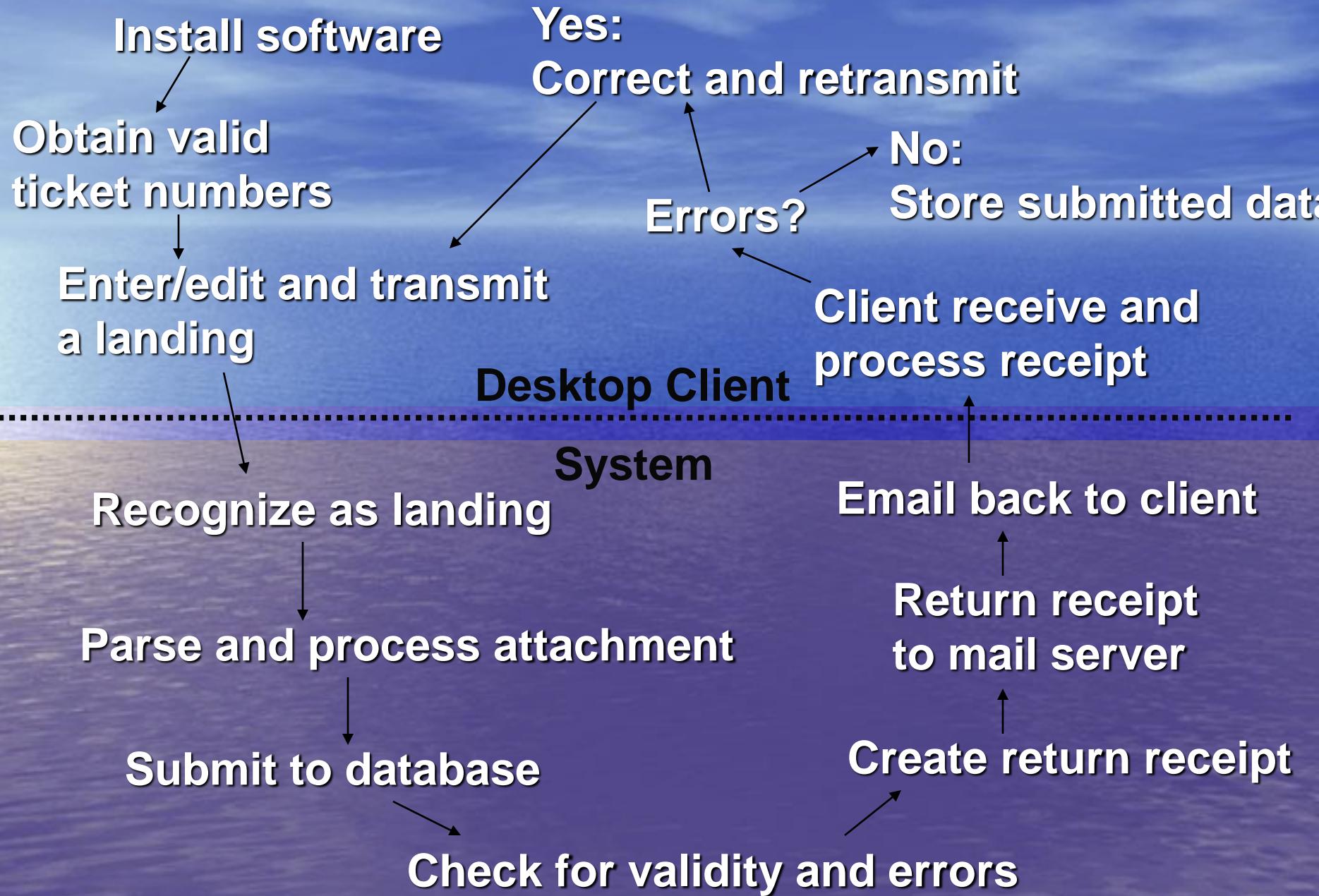


Initial Scoping and Technology Demonstrator

- Investigation of existing web reporting and technologies:
 - Oracle Forms reported to be slow.
 - High Oracle licensing fees – Java being used is open-source.
 - Java is a thin-client format. System uses minimized graphics.
 - Web connectivity with simple java interface was shown to be acceptable from sites across Alaska.

System setup and process

- Web system - access through browser, no setup.
- Desktop application steps:
 - Installation (one-time)
 - Establish directories and email protocols
 - Email directory for attachments
 - Return receipt directory
 - Transmit (can include upload of ticket numbers)
 - Process return receipts
 - Handle errors
 - Manual landings – agency data entry
 - Central location to handle manual submissions



Transmission requirements

- Web session for web application
- Email attachment for desktop application
 - Specifications – communication system must submit and receive email
 - Zip or file attachment, identification method necessary in receiving system
 - PERL or similar script to handle attachment
 - Extraction of XML
 - Web services to pass XML to data repository

Validation

- Internal – basic validation on web or desktop client.
- Business rules
 - Reality checks (non negative, upper/lower limits)
 - Relationships - permit/person/fishery; condition/disposition; gear/area/species
 - Complicated management programs add extra layers of complexity

Error handling

- Internal
 - Hard errors -> incorrect data; illogical combinations = no submission.
 - Soft errors -> questionable data = warning issued but landing allowed.
- External
 - Discovered by staff after submission – encourage resubmission by processor
 - Agency correction (usually parallel track, dual fields)

Error handling

- Error messages are linked to internal business rules
- Error messages are increasingly well organized and informative
- Better information supplied reduces help desk calls

XML

- Extensible markup language.
 - XML documents are a form of SGML.
 - “document is composed of declarations, elements, comments, character references, and processing instructions, all of which are indicated in the document by explicit markup”.
- <http://www.w3.org/TR/REC-xml/>
- Tree structure.

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<landing_report>
    <last_change_user>AMARX</last_change_user>
    <landing_report_id>248</landing_report_id>
    <type_of_landing_report name="Crab">C</type_of_landing_report>
    <status>1</status>
    <header>
        <vessel name="BILLIKIN ">20745</vessel>
        <crew_size>4</crew_size>
        <observers_onboard>0</observers_onboard>
        <port_of_landing ifq_port_code="136" name="Juneau Borough">JNU</port_of_landing>
        <gear name="Pot ">91</gear>
        <proc_code_owner>
            <proc_code processor="WAI Seafoods Juneau">F1234</proc_code>
        </proc_code_owner>
        <date_fishing_began>2005-06-01-08:00</date_fishing_began>
        <days_fished>3</days_fished>
        <date_of_landing>2005-06-05-08:00</date_of_landing>
        <partial_delivery>false</partial_delivery>
        <last_delivery_for_trip>true</last_delivery_for_trip>
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        <registered_crab_receiver_number name="WAI Seafoods Juneau">123456</registered_crab_receiver_number>
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                <fishery>K91TC</fishery>
                <permit_number>19538Z</permit_number>
                <year_seq>0401M</year_seq>
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                <species name="crab, red king">921</species>
            </ifq_permit_worksheet>
        </permit_worksheet>
        <stat_area_worksheets>
            <stat_area fed_area="541" iphc_area="4B">744800</stat_area>
            <percent>100</percent>
            <effort>140.0000</effort>
        </stat_area_worksheet>
    </header>
</landing_report>

```

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window Help

Type a question for help

Reply with Changes... End Review...

A1 AMARX

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	
1	AMARX	6808	C	Crab	1	111	JESSICA MARIE	50	2	JNU	136	Juneau Borough	91	Pot	F1234	WAI Seafoods Juneau	2005-05-05-08:00	2005-06-06-08:00	FALSE	TRUE	12
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Sheet1 / Sheet2 / Sheet3 /

Ready

Microsoft Excel - Book1

Type a question for help

Reply with Changes... End Review...

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XML Source

XML maps in this workbook:

landing_report_Map

last_change_user

landing_report_id

type_of_landing_report

<value>

name

status

header

vessel

<value>

name

crew_size

observers_onboard

port_of_landing

<value>

ifq_port_code

name

gear

<value>

name

proc_code_owner

proc_code

<value>

process

date_fishing_begin

date_of_landing

partial_delivery

last_delivery_flag

registered_crab_receivers

<value>

name

permit_worksheet

cfec_permit

holder

fishery

To map non-repeating elements, drag the elements from the tree onto the worksheet where you want the data to appear.

To import data, use the Import XML Data button on the List toolbar.

Options XML Maps...

Verify Map for Export...

Tips for mapping XML

NUM

Security

- SSL (Secure Socket Layer) transmission
- Identification
 - User registration and validation
 - User ID and password for session
 - Unidentified user blocks receipt of data
- System logs of all activity
- Big Brother

Database and programming languages

- Oracle database
- SQL for query and scripts/triggers for internal tables
- HTML front-end
- Java – script behind front-end, business rules, processing language.
- PERL/Java – email handling
- Web services and SOAP

Reports generated

- Fish ticket – PDF paper printout
- Searches on account by processor of submitted landings
 - Limited users
 - Supervisory users
- IFQ account access and summary
- Agency reports – SQL based on repository
- Log files

Problems

- User account management – did not match business practices.
- Permit and stat areas – Stacking of 9 permits across 14 stat areas was not anticipated
- Refresh of CFEC permits not timely
- Preliminary problems with IFQ interface and permit updates

Support

- Redeployment of fixes for client software (Processor Desktop) takes coordination.
- Web application fixes are modular – easier modifications, with staged deployment
- Change implemented through 3 environments – test, training and production.

Interagency Electronic Reporting

Questions

