



SMS in Practice - Information Gathering and Risk Management

SMS Seminar & Workshop

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Background: Air Canada Legacy Systems

- British Airways Safety Information System (BASIS):
 - » only used by Flight Operations, Flight Safety
- SurPass Audit Software:
 - » only used by Maintenance
- Parklane Injury system
 - » only used for reporting of personal injuries for claims purposes

Discrete systems which did not communicate

Background: Air Canada Legacy Systems

Decision made by the Executive to consolidate:

- Document Control;
- Audits;
- Safety Reporting; and

...into a single Information Management tool

Benefits of Integration

- help meet Transport Canada SMS and IOSA requirements
- **one** taxonomy model
- **one** risk model
- efficiencies with respect to operations and maintenance of a single it system
- standardization of functionality across the business units
- easier “Corporate” reporting

The Software Solution:



Help Contents
About Reliance
EtQ Home
EtQ Support
Log Out


[Airport City Codes
Information](#)


[Audits](#)


[Audits and Surveys
Archive](#)


[Centralized Reporting](#)


[Corrective Action](#)


[Delegation](#)


[Document Archive](#)


[Document Control](#)


[Reliance Engine](#)


[Safety Reporting](#)


[Training](#)


[Vendor/Customer
Management](#)

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EtQ Reliance

- Web-based, enterprise system for Quality Management.
- Flexible Workflow Engine™, it allows:
 - » workflows
 - » forms
 - » fields,
 - » reportsto be configured without programming.
- In other words build your system

Reliance Notifications

- E-mail notifications can be used to:
 - » Notify users that they have a task to perform – e.g.
 - > Approve a document
 - > Complete an audit checklist
 - > Do a risk assessment
 - » Notify users when they are late
- Provides hyperlink directly to document.

Subject: Assignment to Corrective Action Document 2nd Party - Customer Verification Assignment #CC-00009, 20-Sep-2007

Date: Thu, 20 Sep 2007 18:03:37 +0000 (GMT)

From: michael.mugridge@aircanada.ca

To: michael.mugridge@aircanada.ca

Please click here to open the document:

[Corrective Action Document # CC-00009](#)

Three Principle Modules – Implementation at Air Canada

| | |
|--|--------------------|
| Document Management and Control | Implemented |
| Audit and Corrective/Preventive Action | Implemented |
| Safety Reporting | small group trials |

Document Control



Document Archive



Document Control

Document Management and Control











- For company policy and procedure documents
- Provides control over source documents (e.g. Microsoft Word)
- Automates:
 - » creation of draft copy;
 - » review and comment;
 - » approval (includes Transport Canada approval);
 - » etc.
- Provides a central repository for
 - » current; and
 - » archived documents

Document Control - Draft


Click (Go To) to assign this Document Control to the next phase.

Created by **Kelly Briggs** on **5-Jul-2007 11:47:38 AM**


Identification

| | |
|----------------------------|--|
| Title: | <input type="text" value="*EMS Std 002"/> |
| Type: | Environmental Management System Manual - Pub 10 |
| AC Pub Number: | <input type="text" value="10"/> |
| Number: | EMS-00014 |
| Revision: | <input type="text" value="*1"/> |
| Effective Date: | <input type="text" value="5-Jul-2007"/>  |
| Review Date: | <input type="text" value="5-Jul-2009"/>  |
| Origination Date: | <input type="text" value="11-Jun-2007"/>  |
| Document Language | <input type="text" value="3. English-French"/>  |
| Originator: | <input type="text" value="Myrka Manzo"/>  |
| Approvers: | <input type="text"/>  |
| Reviewers: | <input type="text"/>  |
| Online Distribution List: | <input type="text"/>  |
| Offline Distribution List: | <input type="text"/>  |
| Transmittal Number: | <input type="text"/> |
| Department: | <input type="text"/>  |

Reference Links

| Document | Title | Number | Revision | Approver |
|---|-------|--------|----------|----------|
|  | | | | |

Reason for New/Revised Document

Requested by: 

Reason:

Reference to Original Document:

Revision History

| Revision | Reason | Approver | Effective Date |
|----------|--------|----------|----------------|
| 0 | test | | 11-Jun-2007 |

Document Body

Office Attachments: 

Other Attachments: [Pub 10 Std 008 Halocarbon Mgmt. fr.doc](#)  

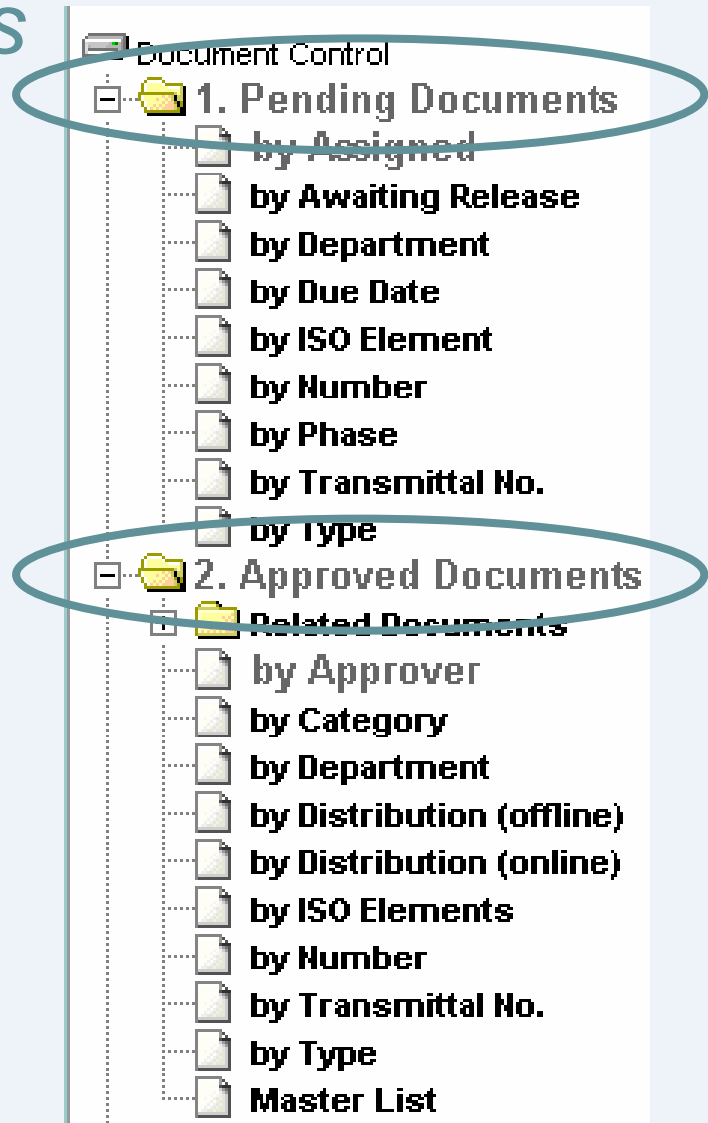
Other Attachments

Other Attachments: 

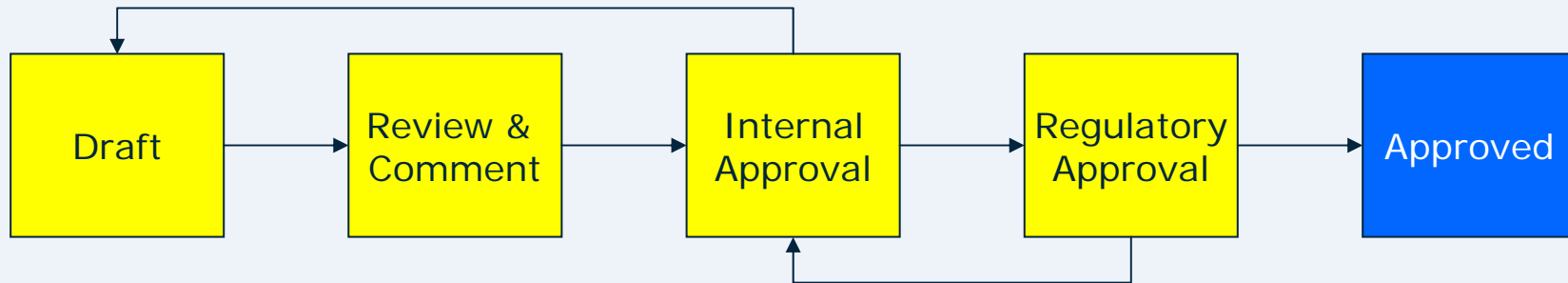
Electronic Signature and Comment History

Document Control Features

Approved documents are separated from Drafts (Pending)



Document Control Features (cont'd)

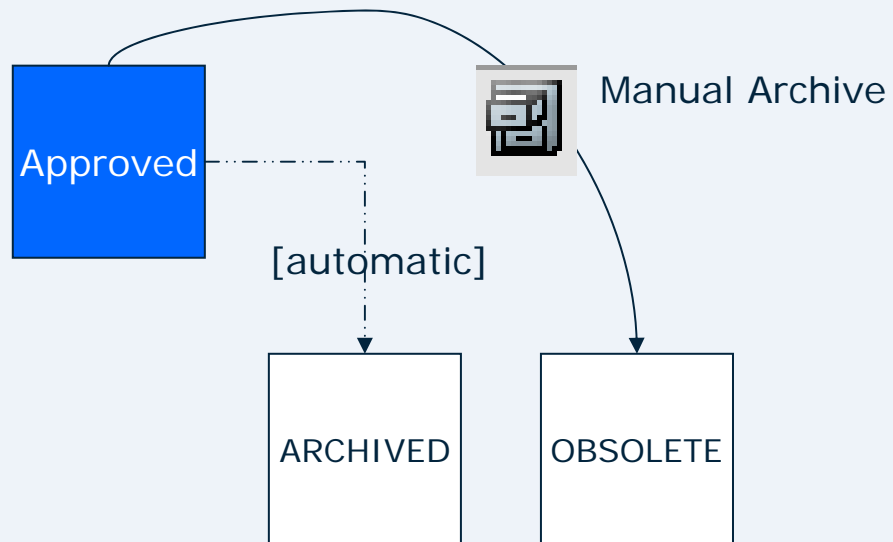


- Draft (Pending) documents travel through a workflow for all value-added work:
 - » review and comment,
 - » approvals;
 - » translation;
 - » printing, distribution, uploading;
 - » etc



Document Control Features (cont'd)







- Superseded documents are *automatically* archived
- Obsolete documents may be manually archived



Document Control Features (cont'd)

Reliance can monitor a document's date and warn (via e-mail) of potentially **outdated** content

Identification

| | |
|-------------------|--|
| Title: | * CHAPTER 6 RESOURCE MANAGEMENT |
| Type: | Integrated Airline Management System Manual - Pub 1 |
| AC Pub Number: | 1 |
| Number: | CQM-00032 |
| Revision: | * 0 |
| Effective Date: | 5-Oct-2005  |
| Review Date: | 5-Oct-2007  |
| Origination Date: | 5-Oct-2007  |
| Document Language | 3. English-French  |
| Originator: | Michael Mugridge  |
| Approvers: | Peter Blake  |

Reliance screen

Subject: Escalation Level 2 for Document Number: CQM-00032
Date: Fri, 05 Oct 2007 21:15:14 +0000 (GMT)
From: AC-ETG@aircanada.ca
To: peter.blake@aircanada.ca

Document is due for Review today. Please click the link to open the document.

[Document Control Document # CQM-00032](#)

E-mail

Audit and Corrective & Preventive Action (CAPA)



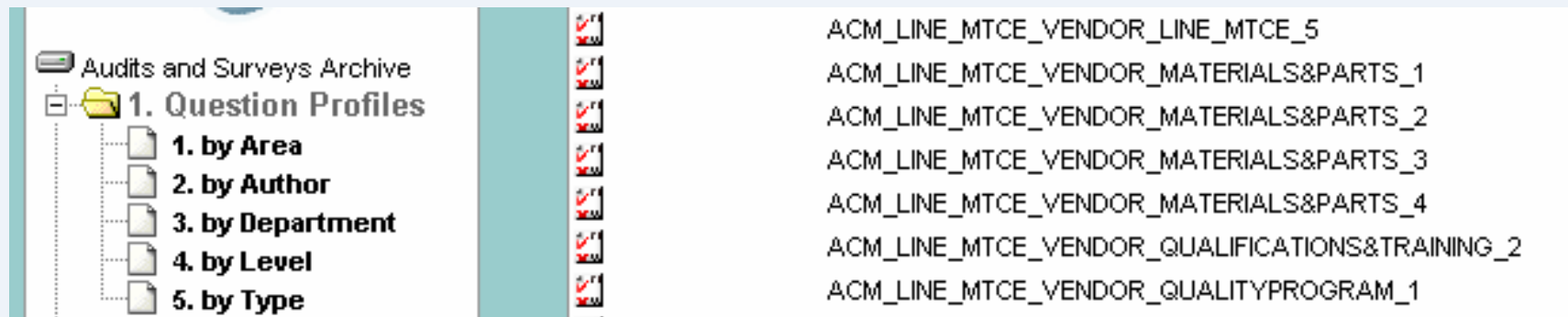
Audits



**Audits and Surveys
Archive**

Question Bank (question profiles)

- Each audit question only exists once.
- If question is revised, all checklists using that question are updated.
- Questions are revision controlled
- Old versions are archived.



The screenshot displays a file explorer interface. On the left, a tree view shows the following structure:

- Audits and Surveys Archive
 - 1. Question Profiles
 - 1. by Area
 - 2. by Author
 - 3. by Department
 - 4. by Level
 - 5. by Type

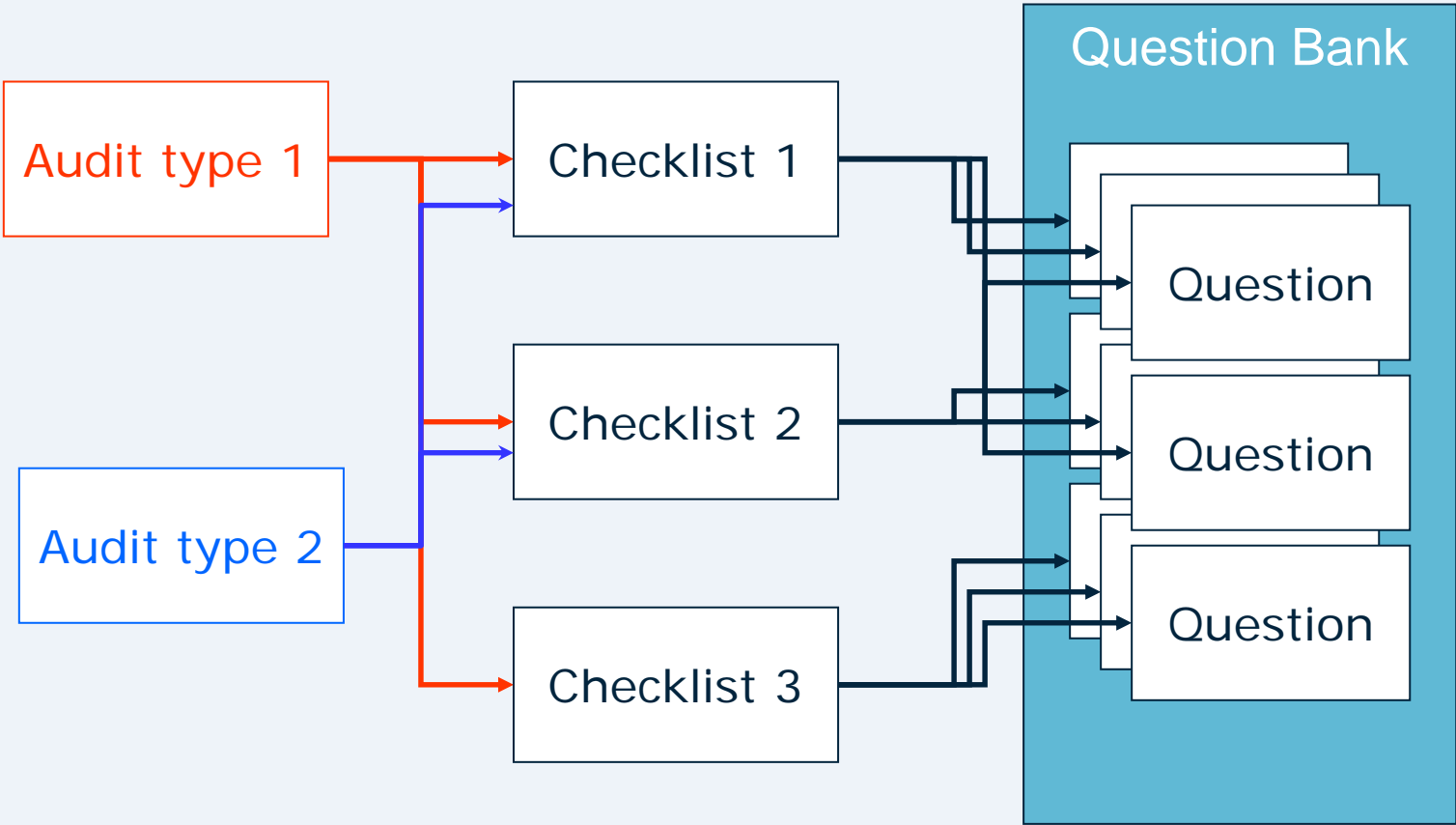
On the right, a list of files is shown, including:

- ACM_LINE_MTCE_VENDOR_LINE_MTCE_5
- ACM_LINE_MTCE_VENDOR_MATERIALS&PARTS_1
- ACM_LINE_MTCE_VENDOR_MATERIALS&PARTS_2
- ACM_LINE_MTCE_VENDOR_MATERIALS&PARTS_3
- ACM_LINE_MTCE_VENDOR_MATERIALS&PARTS_4
- ACM_LINE_MTCE_VENDOR_QUALIFICATIONS&TRAINING_2
- ACM_LINE_MTCE_VENDOR_QUALITYPROGRAM_1

Audit Templates

- Checklist templates – points to questions in question bank
- Audit template – point to checklists

Audit Templates



Audit Records

- Creating an audit of a certain type copies the template contents into records.
- Templates remain untouched.

Audit Document (Record)

Audit Information

Document

Workflow



Use this section to enter information related to the audit.

| | |
|---------------------------|--|
| Audit Type: | INTL |
| Audit Number: | 00408 |
| Audit Owner Organization: | * AC Mainline : International |
| City: | London Heathrow Airport |
| Department: | * Internal |
| Requested By: | Eric Quesnel |
| Start Date: | 10-Sep-2007 |
| Start Time: | 12:00 PM |
| End Time: | <input type="text"/> |
| Duration: | <input type="text" value="4"/> Day(s) |
| Frequency: | <input type="text" value="2"/> Year(s) |
| Next Audit Due: | 23-Sep-2009 |
| Scope: | INTL safety audit |
| Attachments: | |
| Other Links: | |

Checklists and Corrective Actions

INTL Accident Prevention created on Aug 13, 2007 (Draft)

Result:

* Is Required

INTL Baggage created on Aug 23, 2007 (Draft)

Result:

* Is Required

Checklist Document (Record)

Checklist Document - Draft

Created by Eric Quesnel on 23-Aug-2007 11:05:33 AM

Checklist Type: **INTL Accident Prevention**

Parent Audit: INTL No. 00408

Attachments: 

Other Links: 

Questions

| Question | Reference and Hints | Document References, Explanatory Notes and Comments | |
|--|---------------------------------|---|---|
| <u>Confirm that the Corporate Safety Policy has been posted in each work area.</u> | Pub 5.8.1.04 CLC 125.(1)(d)(ii) | Result: | * <input checked="" type="checkbox"/> Is Required |
| <u>Line Management promotes the Station Safety Plan.</u> | Pub 5.8.04(b) Pub.71.12.1.3 | Result: | * <input checked="" type="checkbox"/> Is Required |
| <u>Workplace inspections have been regularly scheduled and recorded.</u> | Pub 71.12.1.3.2 CLC 136.(5)(j) | Result: | * <input checked="" type="checkbox"/> Is Required |
| <u>Monitor aircraft pre arrival</u> | | | |

Question Document (Record)

| | | | | | | | | | | |
|-------------------|--|----------|----------|--|--|--|--|--|--|--|
| Question Type: | Intl Accident prevention 06 | Document | Workflow | | | | | | | |
| Parent Checklist: | INTL Accident Prevention created on Aug 23, 2007 (Draft) | | | | | | | | | |
| Other Links: | | | | | | | | | | |

Question Information

| | |
|------------------------------|--|
| Question: | Confirm that the Corporate Safety Policy has been posted in each work area. |
| Reference: | Pub 5.8.1.04 CLC 125.(1)(d)(ii) |
| Mandatory or Recommended: | Mandatory |
| Hint: | |
| Result: | Compliant / In Conformance |
| Evidence: | Sampled 10 work areas - all had policy posted. |
| Previous Evidence: | |
| Corrective Actions: | |
| Previous Corrective Actions: | |
| Attachments: | |

Done **Next Question** Last Question

Audit Record Workflows

Audit Record



Checklist Document



Question Document



- Lead auditor can manage the audit record and assign checklists to individual auditors for completion

Audit – Corrective Action Links

CAPA are automatically linked to the Audit Report

Corrective Action - Corrective Action Plan

Click (Go To) to assign this Corrective Action to the next phase.


Created by **Francisco Henao** on **13-Sep-2007 3:27:19 PM**

| | |
|-------------------------------|--|
| Document Type: | 1st Party - Internal |
| Document Number: | IN-00575 |
| Assigned to: | Nando Volpi |
| Department: | Internal : AC Mainline : ACM : Line Maintenance |
| Location: | Calgary |
| CAP Originating Organization: | AC Mainline : ACM |
| CAP Approver(s): | Bryan Fiebelkorn |
| Repeat Finding?: | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| Repeat Finding Ref #(s): | |
| Action Required: | <input checked="" type="checkbox"/> Corrective <input checked="" type="checkbox"/> Preventative |
| Reference Link: | <u>Are corrosive products, lubricants, toxic, and flammable materials, as well as high pressure bottles correctly labeled, stored and secured?</u> |
| Linked Documents: | |
| Other Links: | |
| Activities: | |
| Office Attachments: | |

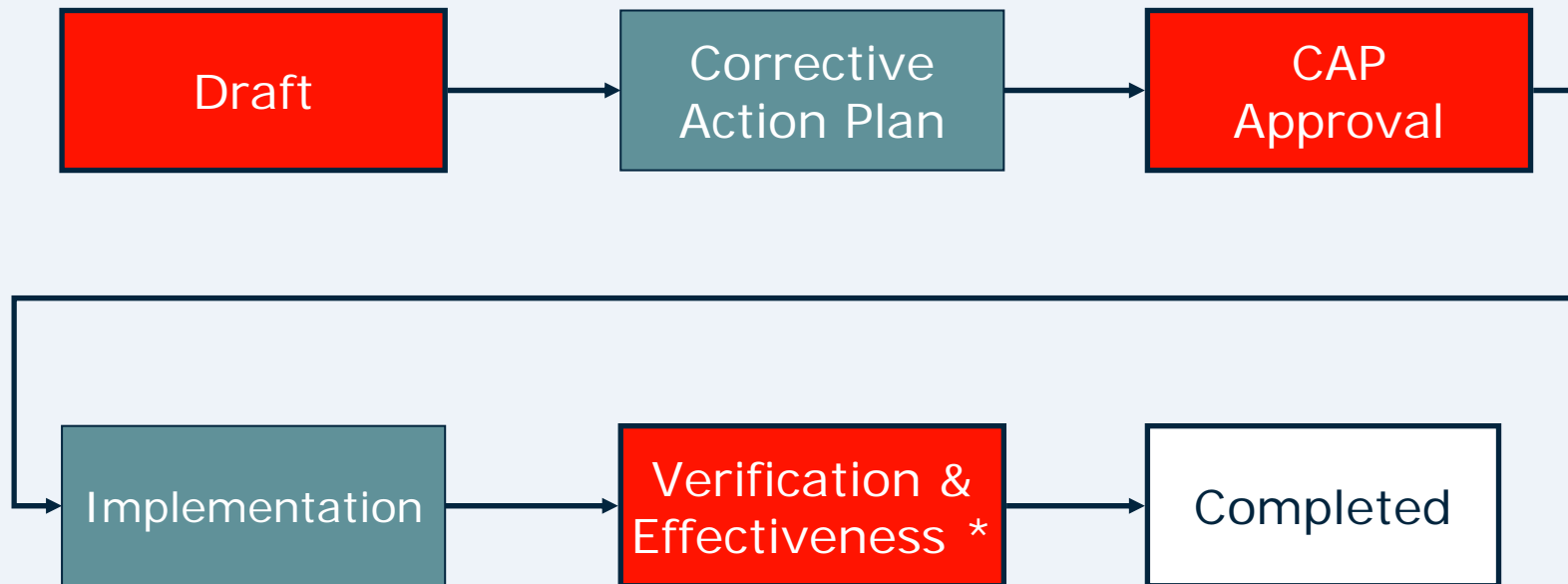
Audit – Corrective Action Links


- Audit question contains link to CAPA

Question Information

| | |
|------------------------------|---|
| Question: | Are corrosive products, lubricants, toxic, and flammable materials, as well as high pressure bottles correctly labeled, stored and secured? |
| Reference: | 1) Pub. 5 WHMIS (Safety Environment). Chapter 14.10.2 and 3 2) AC-MPM Standard, Hangar Mtce, Oxygen System Handling Precautions. 3) Pub 5, Chapter 14, 9. Safe Handling of Pressurized Gas Cylinders. 4) Pub 5. Chapter 14, 4. Hazardous Materials handling 10.4 and 9.02 5) NFC3.2.8.2, NFC3.2.8, NFC3.3.5 6) M&P Materials section 11 |
| Mandatory or Recommended: | Mandatory |
| Hint: | 1) Corrosive products and luricants are not to be stored together (same cabinet), flammable materials to be stored vapor proof cabinets and, oxygen cylinder are to be located into their containment box. 2) Products, containers fluid dispensing cans and servicing units are properly identified and stored for their content, and its use is allowed as per AMM/CMM and/or M&P 3) Workplace lables must be visible on all secondary containers |
| Result: | <input type="text" value="Finding"/> |
| Evidence: | <div style="border: 1px solid black; padding: 5px;">Storage of pressurizes cylinders are in an area which is not vented to the outside and does not meet the National Fire Code of Canada for class 2 gases cylinder storage.</div> |
| Previous Evidence: | |
| Corrective Actions: | 1st Party - Internal - Corrective Action # IN-00575 (Corrective Action Plan, due Oct 25, 2007) |
| Previous Corrective Actions: | |
| Attachments: |  |

CAPA Document Workflow



 Auditor








 Auditee

Fields - Draft

Corrective Action - Draft

Click (Go To) to assign this Corrective Action to the next phase.

Created by **Michael Mugridge** on **4-Oct-2007 3:46:13 PM**

| | |
|-------------------------------|--|
| Document Type: | 1st Party - Internal |
| Document Number: | Please Save |
| Assigned to: | * <input type="text"/>  |
| Department: | <input type="text"/>  |
| Location: | <input type="text"/>  |
| CAP Originating Organization: | * <input type="text"/>  |
| CAP Approver(s): | * <input type="text"/>  |
| Repeat Finding?: | <input type="radio"/> Yes <input type="radio"/> No |
| Repeat Finding Ref #(s): | <input type="text"/> |
| Action Required: | * <input checked="" type="checkbox"/> Corrective <input checked="" type="checkbox"/> Preventative |
| Reference Link: | |
| Linked Documents: | |
| Other Links: |  |
| Activities: | |
| Office Attachments: |  |

Fields – Draft (cont'd)

Problem Description

Please enter a description of the problem, and select the appropriate category.

Category:

Problem Summary:

Problem Description:

Attachments:



Problem Containment

What steps were immediately taken to mitigate the problem - e.g. were parts quarantined? Was a machine locked out? Was a safety hazard removed?

Performed by:

Description of Containment:

Attachments:



Root Cause Analysis

- Uses HFACS model which will be covered in the Safety Module

Fields - Corrective Action Plan

Corrective/Preventive Action

Have actions been taken which specifically address each of the root cause(s) identified? Will the actions taken prevent recurrence of the causes?

Description of Corrective Action: *

Description of Preventive Action: *

Number of business days required to implement plan: *

Attachments: 

Fields - Implementation

Implementation

Please enter your implementation details and the date.

Implementation: *

Implementation Date: *



Fields Verification and Validation

Verification and Effectiveness

Please describe the results and record all relevant objective evidence.



Results of Implementation:

Effective?

Verified by:



Verification Date:



Description of Verification:

Attachments:



Output Reports – Audit

WebFocus: Web-based reporting tool

iSMS
Integrated Safety Management System

AIR CANADA

Logoff | Views


Audits | Deferred Status | Library | ETL Status Reports

Recent Audits Report | **Output**

Recent Audits Report

| # | Phase | Start Date | Department | City | Vendor |
|---------------------|--------------|--------------|---|---------------------------------|----------------------|
| 510 | Scheduled | Dec 31, 2007 | External : Line Maintenance Arrangement | Philadelphia/International | Airline Tech Rep ATR |
| 300 | Scheduled | Dec 22, 2007 | Internal : AC Mainline : ACM : Line Maintenance | Toronto/Pearson International | . |
| 303 | Scheduled | Dec 18, 2007 | Internal : AC Mainline : ACM | Montreal/Trudeau | . |
| 508 | Scheduled | Dec 17, 2007 | External : Line Maintenance Arrangement | Buenos Aires/Ministro Pistarini | United Airlines |
| 209 | Accomplished | Dec 15, 2007 | Internal : AC Mainline : ACM : Line Maintenance | Sao Paulo Guarulhos | . |
| 304 | Scheduled | Dec 15, 2007 | External : Line Maintenance Arrangement | Port Au Prince | American Airlines |

Sample Report

AIR CANADA 

Audit Summary Report

Department: Internal : AC Mainline : ACM : Line Maintenance

City: Sao Paulo Guarulhos **Requested By:** Francisco Henao

Audit No: 299 **Auditor(s):**

Audit Organization: AC Mainline : ACM

Start Date: Dec 15, 2007 **Duration:** 1 day(s)

Audit Type: ACM_CONTRACTED LINE MAINTENANCE- NON BILATERAL

Scope: Audit of United line maintenance operations in GRU

Executive Summary:

Results

| | |
|----------------------------|----|
| Compliant / In Conformance | 29 |
|----------------------------|----|

- Pdf – but can be other format

AIR CANADA 

Safety Reporting



Safety Reporting

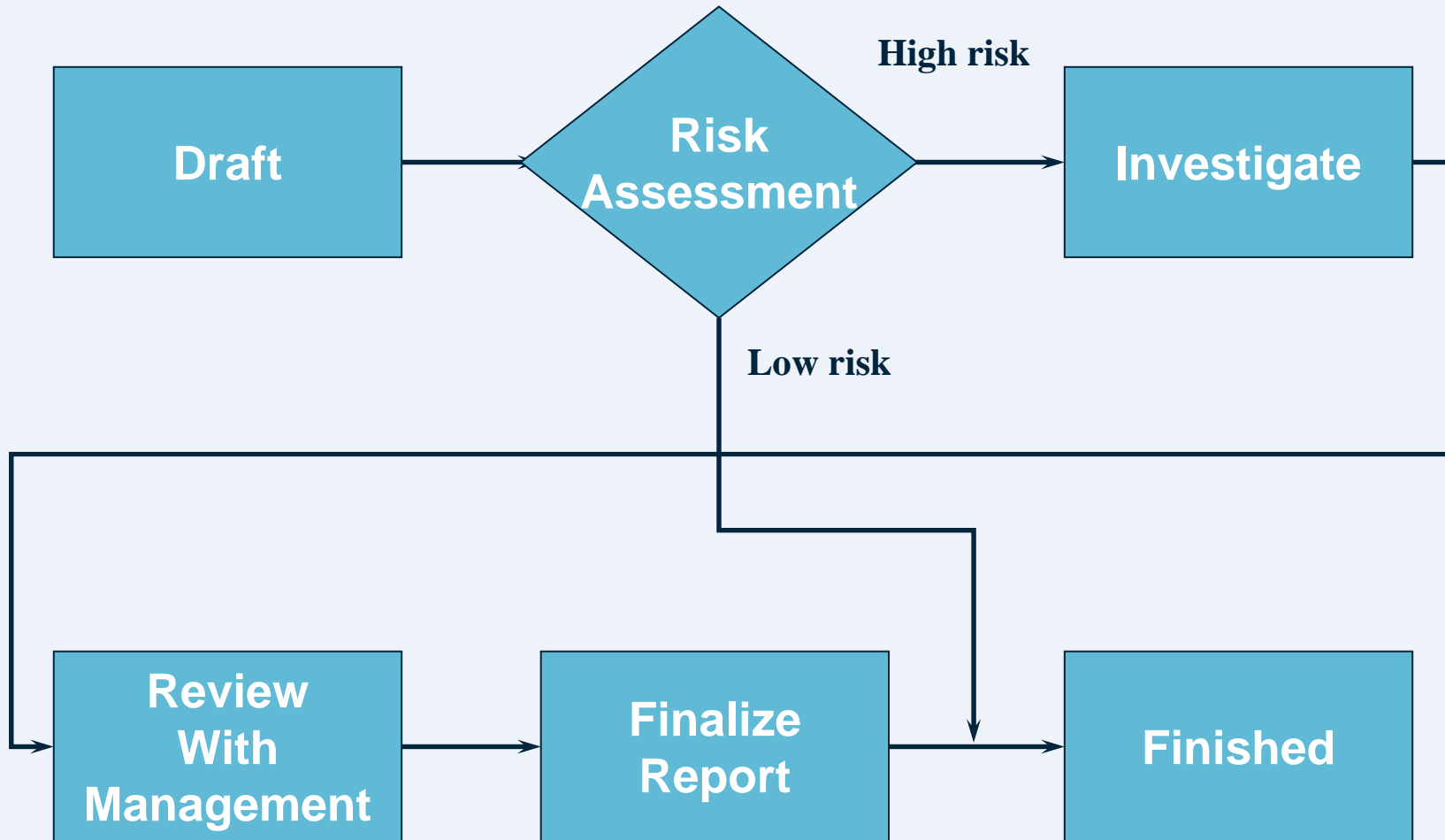
Safety Reporting

- Provides a single, platform for reporting safety events and hazards / concerns
- Used by several different Branches and Business Units
- Uses intuitive Risk Assessment Model (IRAM) and root cause analysis/causal factors model (HFACS)

Occurrence Form

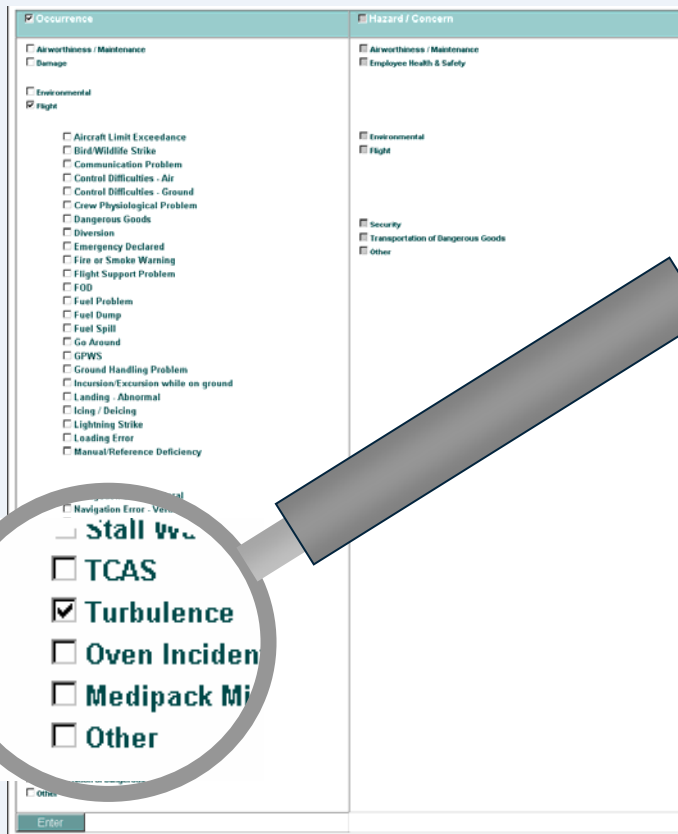
- Contains approximately 200 fields
- Shows / hides sections/fields depending on user entries – e.g.
 - » Disruptive passenger
 - » Environment
 - » Injury
 - » Turbulence
 - » Equipment damage
 - » Fuel dump

Occurrence Workflow



Phase - Draft


Employee checks box to determine type of report






The image shows a screenshot of a web-based incident reporting form. The form is divided into two main sections: 'Occurrence' and 'Hazard / Concern'. The 'Occurrence' section is expanded, showing a list of categories with checkboxes. A magnifying glass is positioned over the 'Turbulence' checkbox, which is checked. The 'Hazard / Concern' section is also visible but not expanded.

| Occurrence | Hazard / Concern |
|--|--|
| <input type="checkbox"/> Airworthiness / Maintenance | <input type="checkbox"/> Airworthiness / Maintenance |
| <input type="checkbox"/> Damage | <input type="checkbox"/> Employee Health & Safety |
| <input type="checkbox"/> Environmental | |
| <input checked="" type="checkbox"/> Flight | <input type="checkbox"/> Environmental |
| <input type="checkbox"/> Aircraft Limit Exceedance | <input type="checkbox"/> Flight |
| <input type="checkbox"/> Bird/Wildlife Strike | |
| <input type="checkbox"/> Communication Problem | |
| <input type="checkbox"/> Control Difficulties - Air | |
| <input type="checkbox"/> Control Difficulties - Ground | |
| <input type="checkbox"/> Crew Physiological Problem | |
| <input type="checkbox"/> Dangerous Goods | <input type="checkbox"/> Security |
| <input type="checkbox"/> Deviation | <input type="checkbox"/> Transportation of Dangerous Goods |
| <input type="checkbox"/> Emergency Declared | <input type="checkbox"/> Other |
| <input type="checkbox"/> Fire or Smoke Warning | |
| <input type="checkbox"/> Flight Support Problem | |
| <input type="checkbox"/> FOD | |
| <input type="checkbox"/> Fuel Problem | |
| <input type="checkbox"/> Fuel Dump | |
| <input type="checkbox"/> Fuel Spill | |
| <input type="checkbox"/> Go-Around | |
| <input type="checkbox"/> GPWS | |
| <input type="checkbox"/> Ground Handling Problem | |
| <input type="checkbox"/> Incursion/Excursion while on ground | |
| <input type="checkbox"/> Landing - Abnormal | |
| <input type="checkbox"/> Icing / Deicing | |
| <input type="checkbox"/> Lightning Strike | |
| <input type="checkbox"/> Loading Error | |
| <input type="checkbox"/> Manual/Reference Deficiency | |
| <input type="checkbox"/> Navigation Error - Vertical | |
| <input type="checkbox"/> Stall Warning | |
| <input type="checkbox"/> TCAS | |
| <input checked="" type="checkbox"/> Turbulence | |
| <input type="checkbox"/> Oven Incident | |
| <input type="checkbox"/> Medipack Misuse | |
| <input type="checkbox"/> Other | |

Phase – Draft: General Sections

| General | |
|-------------------------|---|
| Report Submitter | |
| Branch | Corp Safety and Environment |
| Date & Time Reported | 4-Oct-2007 4:21:42 PM  |
| | 28 |
| Dept ID | <input type="text"/> |

| Occurrence / Hazard | |
|---|--|
| Immediate Effect | <input type="text"/>  |
| Phase of Operation | <input type="text"/>  |
| Operational Effect | <input type="text"/> |
| Occurrence / Hazard Details | <input type="text"/> |
| <small>(Employee's account of the accident/ incident / concern.)</small> | |
| Do you wish your Union to view this report? | <input type="radio"/> Yes <input type="radio"/> No |
| Attachments |  |
| Anticipated lost time injury to two or more employees? | <input type="radio"/> Yes <input type="radio"/> No |
| Was equipment involved? | <input type="radio"/> Yes <input type="radio"/> No |
| <small>"Equipment" includes aircraft and components. If yes, complete Equipment Involved section below.</small> | |

If yes, Employer to advise local HRSDC (labour) officer.

Phase - Draft: General Sections

| | | | | |
|---------------------------------------|----------------------|-------------|-----------------------|----------------------|
| Persons Advised | <input type="text"/> | | | |
| Customer / Other Person Advised * | <input type="text"/> | | | |
| Immediate Supervisor Advised Name | <input type="text"/> | Employee ID | Date & Time Advised | <input type="text"/> |
| H&S Employee Rep Advised Name | <input type="text"/> | Employee ID | Date / Time Advised | <input type="text"/> |
| Airworthiness Controller Advised Name | <input type="text"/> | Employee ID | Date & Time Advised | <input type="text"/> |
| Env Affairs Person Advised Name | <input type="text"/> | Employee ID | Date and Time Advised | <input type="text"/> |

Location of Event

| | | |
|------------------------------|----------------------|------------------------------|
| Primary Location | <input type="text"/> | <input type="text"/> |
| Secondary /Tertiary Location | <input type="text"/> | Specify <input type="text"/> |
| Station City Code | <input type="text"/> | |
| Air Canada Building | <input type="text"/> | |

Ambient Factors

| | | | |
|-------------------------|--|-----------------------------------|----------------------|
| Was weather a factor? * | <input type="radio"/> Yes <input type="radio"/> No | Ramp / Floor / Surface Conditions | <input type="text"/> |
|-------------------------|--|-----------------------------------|----------------------|

Phase - Draft: Context Specific Sections

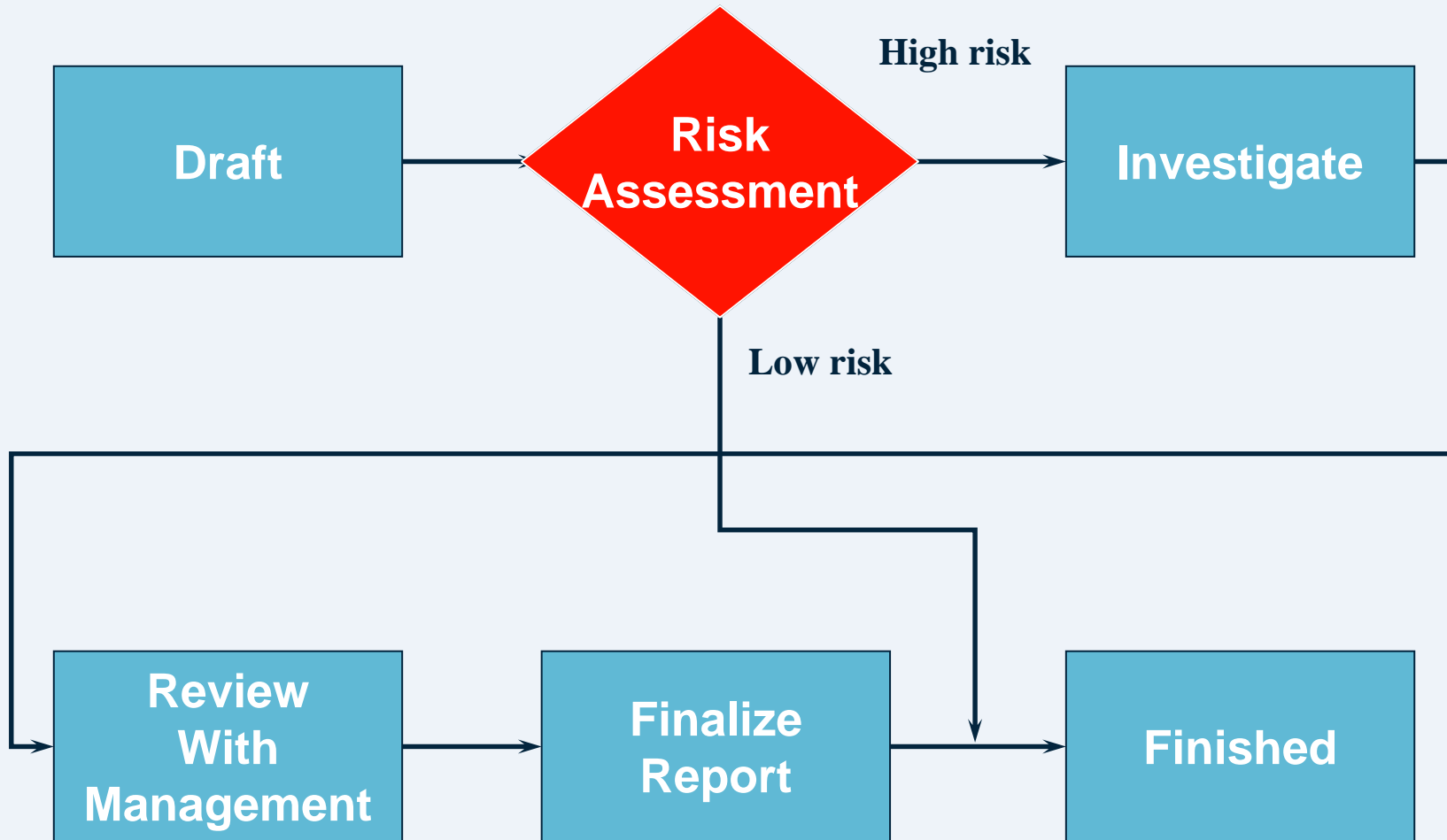
...plus context specific sections

- Stair Training
- TCAS
- Turbulence
- Oven Incident
- Medipack Mishandling
- Other

Turbulence

| | | | | | |
|-------------------------------------|--|------------------------------------|--|-------------------------------------|--|
| Wake Turbulence | <input type="text"/> | Turbulence Severity | <input type="text"/> | Turbulence was: | <input type="radio"/> Anticipated <input type="radio"/> Unanticipated |
| Heading In Degrees | <input type="text"/> | Position on Glideslope | <input type="text"/> | Position on Extended Centerline: | <input type="text"/> |
| Change in Pitch Attitude (degrees): | <input type="text"/> | Change in Roll Attitude (degrees): | <input type="text"/> | Describe any vertical acceleration: | <input type="text"/> |
| Give details of preceding aircraft: | <input type="text"/> | | | | |
| Was Cabin Crew Advised Prior? | <input type="radio"/> Yes <input type="radio"/> No | Was Seat Belt Sign On? | <input type="radio"/> Yes <input type="radio"/> No | Was RVSM a Factor? | <input type="radio"/> Yes <input type="radio"/> No |

Occurrence Workflow



Risk Assessment

- Air Canada has developed an intuitive Risk Assessment Matrix
- Provides **guidance words** to front-line staff to make quick assessments **without** statistics
- User chooses:
 - » Probability of occurrence
 - » Severity of outcome
- The matrix provides a direction letter A → D

Guidance Words

- Exist for the following possible incident outcomes:
 - » Injury
 - » Illness
 - » Aircraft damage
 - » Equipment / facility damage
 - » Safety of flight
 - » Environmental
 - » Regulatory
 - » Security

Sample Guidance Words for Severity for Safety of Flight

- Low;
 - » activation of a safety system or safety procedure with correct crew response
 - » an avoidance maneuver that is deemed not to have been required
 - » loss of single primary system with redundant system available.
 - » smoke, smell, or fire/spark that was brief, identifiable, and extinguished
- Medium;
 - » activation of a safety system or safety procedure followed by an incorrect crew response, which however did not result in an increased safety threat
 - » an avoidance maneuver that is deemed to have been required
 - » loss of multiple primary systems with redundant systems available
 - » an un-commanded flight control input that is easily counter controlled.
 - » smoke, smell, or fire that was prolonged and identifiable, but contained or extinguished.
- High;
 - » activation of a safety system or safety procedure with incorrect response which did result in an increased safety threat
 - » an avoidance maneuver that is deemed to have been aggressive or prolonged
 - » loss of a primary system with no redundant system available
 - » an un-commanded flight control input that is difficult to counter control
 - » smoke, smell, or fire that was prolonged and not identifiable, or not contained, or not extinguishable.
- Critical;
 - » hull loss

Risk Assessment – The Challenge

- How to make all the guidance words available via the software?

Phases – Risk Assessment

| IRAM | | |
|--|-------------|----------|
| CATEGORY OF INCIDENTS FOR THIS OCCURENCE | PROBABILITY | SEVERITY |
| INJURY | 1. Unlikely | 3. High |
| ILLNESS | | |
| AIRCRAFT DAMAGE | | |
| EQUIPMENT / FACILITY DAMAGE | | |
| SAFETY OF FLIGHT | | |
| ENVIRONMENTAL | | |
| REGULATORY | | |
| SECURITY | | |

Selecting the Appropriate Severity

| View Category | Search | Advanced Search |
|--|---|-----------------|
| View Options ▲ | Description ▼ | |
| <input type="radio"/> 1. Low | Activation of a safety system or safety procedure with correct crew response; an avoidance maneuver that is deemed not to have been required; loss of single primary system with redundant system available; smoke, smell, or fire/spark that was brief, identifiable, and extinguished. (v7.0) | |
| <input checked="" type="radio"/> 2. Medium | Activation of a safety system or safety procedure followed by an incorrect crew response, which however did not result in an increased safety threat; an avoidance maneuver that is deemed to have been required; loss of multiple primary systems with redundant systems available; an un-commanded flight control input that is easily counter controlled; smoke, smell, or fire that was prolonged and identifiable, but contained or extinguished. (v7.0) | |
| <input type="radio"/> 3. High | Activation of a safety system or safety procedure with incorrect response which did result in an increased safety threat; an avoidance maneuver that is deemed to have been aggressive or prolonged; loss of a primary system with no redundant system available; an un-commanded flight control input that is difficult to counter control; smoke, smell, or fire that was prolonged and not identifiable, or not contained, or not extinguishable. (v7.0) | |
| <input type="radio"/> 4. Critical | Hull loss. (v7.0) | |

IRAM

| CATEGORY OF INCIDENTS FOR THIS OCCURENCE | PROBABILITY | SEVERITY | IRAM RATING |
|--|----------------------|----------------------|-------------|
| INJURY | <input type="text"/> | <input type="text"/> | |
| ILLNESS | <input type="text"/> | <input type="text"/> | |
| AIRCRAFT DAMAGE | <input type="text"/> | <input type="text"/> | |
| EQUIPMENT / FACILITY DAMAGE | <input type="text"/> | <input type="text"/> | |
| SAFETY OF FLIGHT | <input type="text"/> | 2. Medium | |
| ENVIRONMENTAL | <input type="text"/> | <input type="text"/> | |
| REGULATORY | <input type="text"/> | <input type="text"/> | |
| SECURITY | <input type="text"/> | <input type="text"/> | |

Phases – Risk Assessment

- The **overall** risk for an incident is the **highest** risk for any one outcome

| | | |
|---|--|--|
| | | |
| OVERALL SAFETY REPORT IRAM RATING: | | |
| | | |

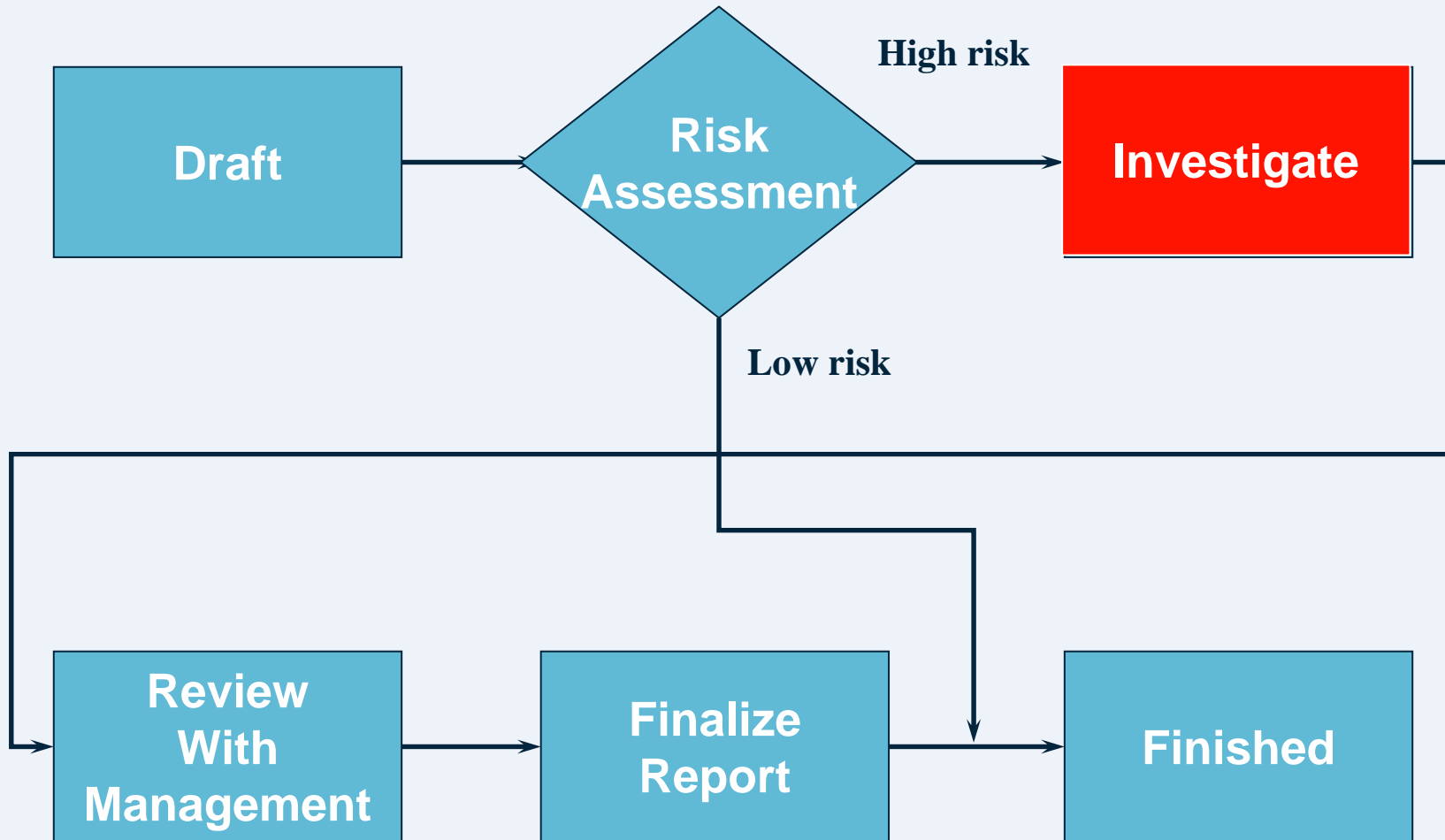
- The employee is also provided with direction

Risk Assessment - Example

| | | | |
|------------------------------------|--|--|----------|
| AIRCRAFT DAMAGE | <input type="text" value="2. Occasional"/> | <input type="text" value="3. High"/> | B |
| EQUIPMENT / FACILITY DAMAGE | <input type="text"/> | <input type="text"/> | |
| SAFETY OF FLIGHT | <input type="text"/> | <input type="text"/> | |
| ENVIRONMENTAL | <input type="text" value="1. Unlikely"/> | <input type="text" value="2. Medium"/> | D |
| REGULATORY | <input type="text"/> | <input type="text"/> | |
| SECURITY | <input type="text"/> | <input type="text"/> | |

| | | |
|---|----------|--|
| OVERALL SAFETY REPORT IRAM RATING: | B | <p>Action / Investigation: Medium level investigation: requires a safety callout; usually requires Branch resources and coordination; a qualified investigator is assigned; approx. 14 - 30 days; usually internal to Air Canada; may require further Risk Assessment; ususally results in corrective actions. Report Type: Class II. Report Composition: Icludes a Branch Executive Summary; Foraml Investigative Report format; approx. 2 - 15 pages; may include Annexes.</p> |
|---|----------|--|


Occurrence Workflow








Phases – Investigation and Recommendation

- Investigate: Supervisor or trained investigator performs investigation:
 - » Executive Summary of Occurrence
 - » Factual Information of Occurrence
 - » Analysis of Occurrence
 - » Findings
 - » Recommendations (Corrective and Preventative Actions)
- Categorizes the incident various ways
 - » HFACS
 - » Immediate Effect
 - » Incident Category

Incident Report

| Incident Report | |
|-----------------------------------|--|
| Executive Summary of Occurrence | <input type="text"/> |
| Factual Information of Occurrence | <input type="text"/> |
| Analysis of Occurrence | <input type="text"/> |
| Findings | <input type="text"/> |
| Target Link | <input type="text"/> |
| Recommendations | <input type="text"/> |
| Investigation Report | <input type="text"/>  |

Investigation Details

| Incident Details | |
|----------------------------------|---|
| Investigator Name | <input type="text" value="Michael Mugridge"/>  |
| Phase of Operation | <input type="text" value="Flight : 13 Landing"/>  |
| Immediate Effect | <input type="text" value="Go Around"/> <input type="text" value="Operational Effect"/> <input type="text" value="Delay"/>  |
| Occurrence/Hazard Classification | <input type="text" value="Flight : Airport Management : Runway Incursion by Ground Vehicle"/>  |
| Occurrence Causal Factors | <input type="text"/> |
| Problem / Finding Description | <input type="text"/> |
| Photos included |  |

- Occurrence Causal Factors is the HFACS field

Human Factors Accident Classification System (HFACS) Implementation

- A. Organizational Influences
 - i. Resource Management
 - ii. Organizational Climate
 - iii. Organizational Process
 - Communication of Change Inadequate
 - Information/Data Incorrect
 - Information/Data not Available
 - Instruction Inadequate or Unclear
 - Instruction not Documented/Available
 - Monitoring and Checking of Resources, Climate, and Processes
 - Revision Process Long/Complicated
 - Reward/Recognition/Incentives
- B. Supervision
- C. Preconditions for Unsafe / Inappropriate Acts
 - a. Conditions of Employee
 - b. Environmental Factors
 - i. Technological Environment
 - ii. Physical Environment
 - c. Personal/Interpersonal Factors
 - i. CRM/Interpersonal Skills
 - Failed to Conduct Adequate Brief/Planning
 - Failure of Leadership/Decision-Making
 - Lack of/Poor Assertiveness
 - Lack of/Poor Communication
 - Lack of/Poor Teamwork
 - ii. Personal Readiness
- D. Unsafe/Inappropriate Acts

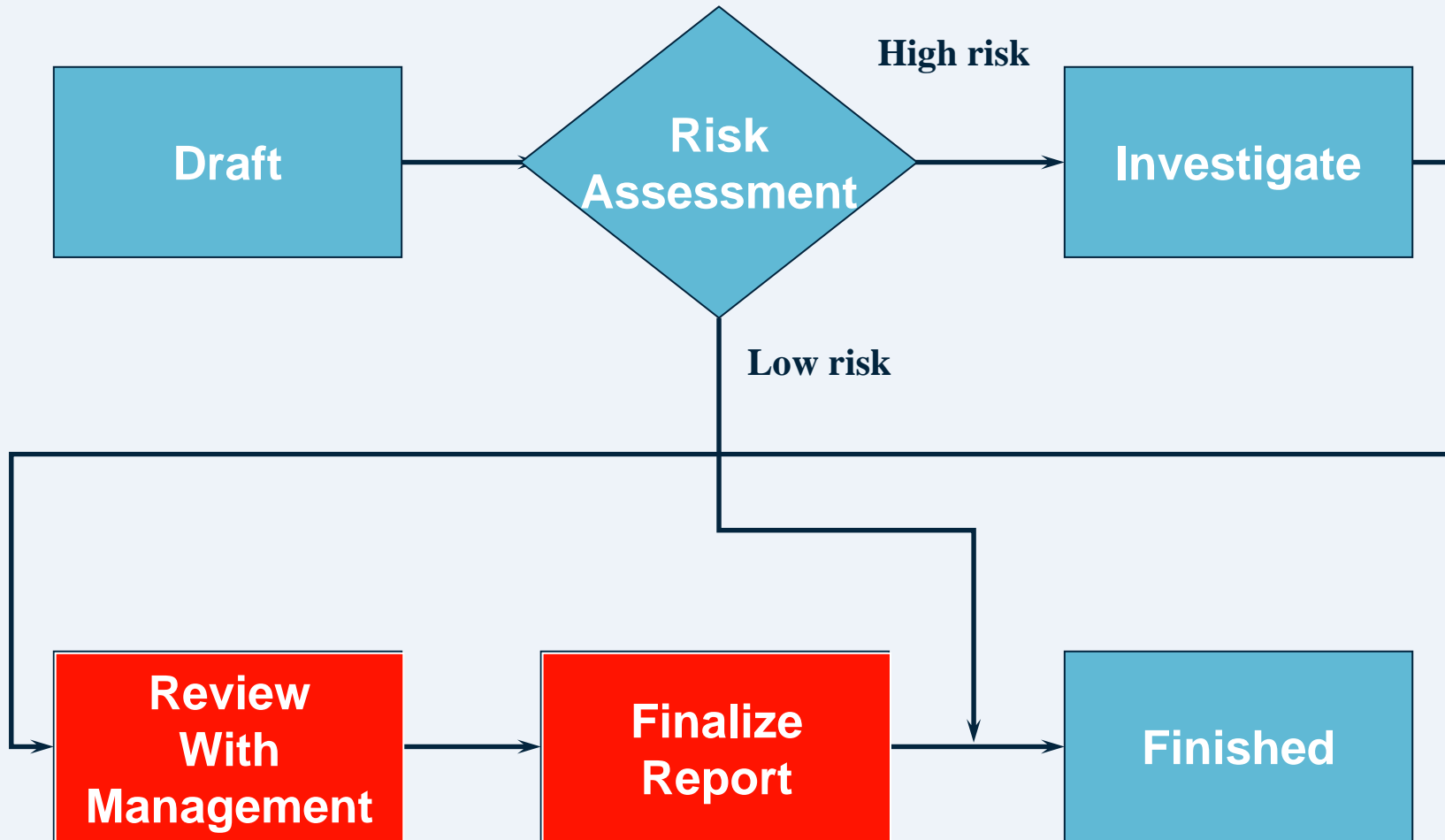
- User can choose as many as needed

Human Factors Accident Classification System (HFACS) Implementation

| | | | |
|----------------------------------|---|--------------------|-------|
| Immediate Effect | Go Around | Operational Effect | Delay |
| Occurrence/Hazard Classification | Flight : Airport Management : Runway Incursion by Ground Vehicle | | |
| Occurrence Causal Factors | A. Organizational Influences : iii. Organizational Process : Communication of Change Inadequate C. Preconditions for Unsafe / Inappropriate Acts : c. Personal/Interpersonal Factors : i. CRM/Interpersonal Skills : Lack of/Poor Teamwork | | |
| Problem / Finding Description | | | |

- Entire tree structure is captured to facilitate roll-up analysis

Occurrence Workflow



Review and Finalize Phases

- Review
 - » Review with responsible management to agree with Corrective Actions
- Finalize Report
 - » Investigator:
 - > creates Corrective Action documents (same as Audit module)
 - > Finishes report.

Output Reports - WebFocus

- Reports for Safety (accident, incident, concern) are being developed.

Questions?

