Ministry of Land, Infrastructure, Transport and Tourism

CIVIL AVIATION BUREAU OF JAPAN

Quality Management in AISC Japan

ICAO AAITF/8 Meeting

Contents

- The introduction of AISC's QM system
- Topics
- Quality Manual
- Issues

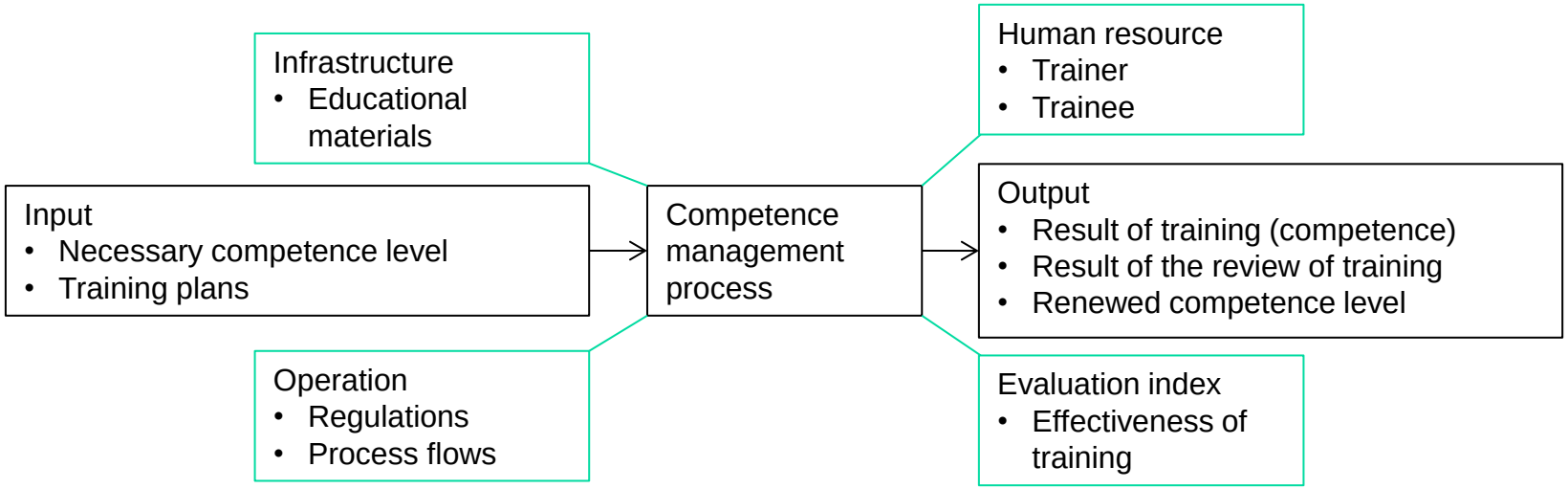
The introduction of AISC's QM system

- Follow ISO9001:2008; No plan for getting certification. Validity of AISC's QMS is ensured by external audit.
- The product is Integrated Aeronautical Information Package (AIP, SUP, AIC, NOTAM, PIB and checklist)
- Process approach.
- Mieruka (visualization) – identifying problems and bringing them to the foreground.
- Visible management – utilizing storyboard, whiteboard, etc.
- Records, Records, Records – tracing events and analysis.
- Communications – internal and customer.
- Audits – internal and external.

Topics: Process approach

- Processes are established for all QMS activities.
- Determination of the granularity of process is important. You can establish processes as deep as you like, but nobody can follow them if there are too many processes. However, some processes such as editorial of AIP should cover all procedures including know-how so that the successor is able to handle any situations.
- PDCA is applied to processes.
- Processes are monitored and measured. The results are used to take corrective actions and preventive actions.

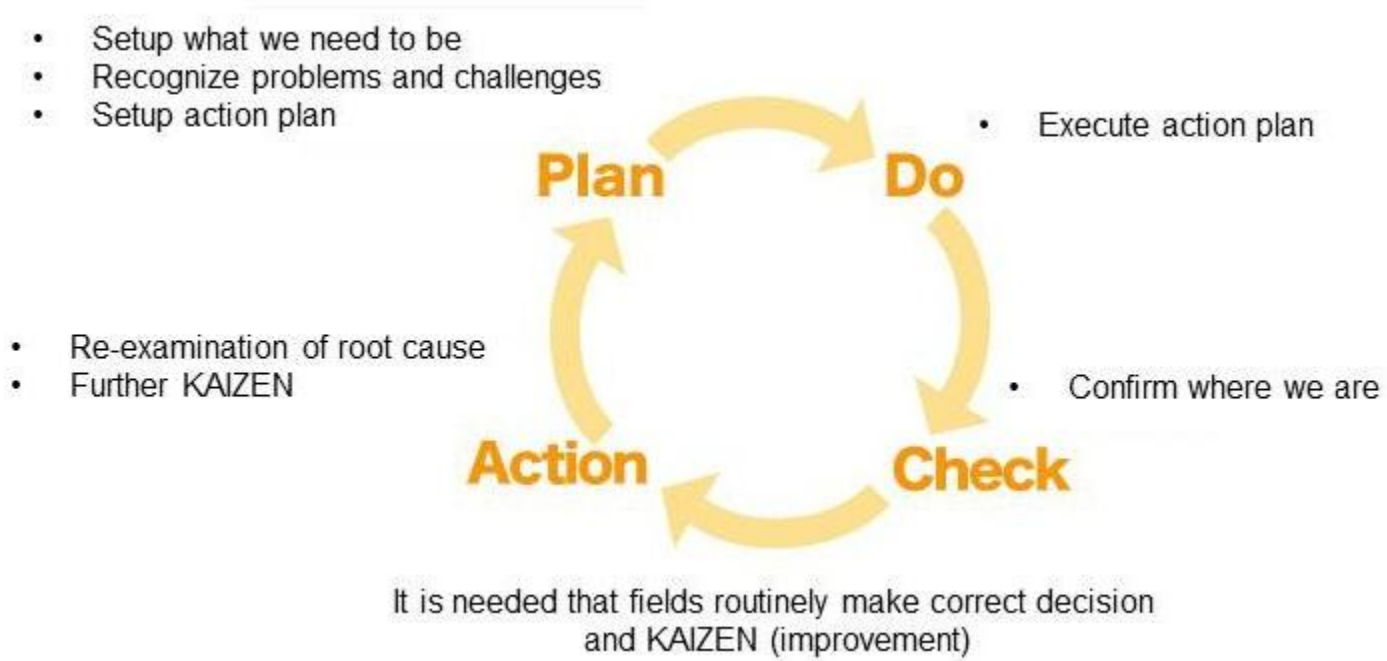
Top level competence management process diagram (excerpt)



Process flows are made based on the process diagram

Topics: Mieruka (visualization)

- Identifying problems hidden in the field and bringing them to the foreground.
- Manager gives field staffs the information and data, such as the statistics of nonconformities. Staffs look for the causes and make improvement.
- The key factor is the initiative of staffs and they are supposed to have ability to identify the problems behind the information and data.
- Manager needs to setup an environment by enlightening and educating staffs to have competence and motivation.



Topics: Visible management

- The presentation of a wide variety of information in the workplace. Such information may pertain to jobs themselves, to the business as a whole, to how work teams are progressing on a project (ISO).
- AISC employs visible management using white boards:
  - Significant information for all staffs
  - Short term information related to NOTAM for dynamic teams
  - Storyboard for editing AIPs in an editorial period (usually 2 weeks)

Storyboard for AIP editorial period

Significant information for all staffs

Short term information related to NOTAM

Quality Manual

- The following pages are the introduction of AISC's QMS according to the articles of Quality Manual.
- Not all articles are covered in this presentation. The comparison table between Quality Manual and ISO9001 requirements in this presentation is as follows:

Chapter	Section	Section	ISO9001:2000 Requirements	Item of Quality Manual					Correspondence between terms used in ISO9001:2000 requirements and terms used in the Quality Manual
				Chapter	Section	Section	Section	Item	
0			Introduction	0				Purpose and Outline	Management → Center Manager
1			Scope	1				Application	
					1.3			Applicable Organization	Customer → User
					1.4			Applicable Standards	
2			Normative references	2				Normative References	Product realization → Execution of Aeronautical Information Service
3			Terms and definitions	3				Terms and Definitions	
4			Quality management system	4				Quality Management System	Planning of product realization → Execution Plan of Aeronautical Information Service
	4.2		Documentation requirements		4.2			Documentation Requirements	
		4.2.4	Control of records			4.2.4		Control of Records	
5			Management responsibilities	5				Responsibility of Center Manager	Product → Aeronautical information service or aeronautical information
	5.1		Management commitment		5.1			Involvement of Center Manager	
	5.3		Quality policy		5.3			Quality Policy	Product requirement → Aeronautical information service requirement
		5.4.1	Quality objectives			5.4.1		Quality Objectives	
		5.4.2	Quality management system planning			5.4.2		Quality Management System Planning	Customer requirement → User requirement
		5.5.3	Internal communication			5.5.3		Internal Communication	
	5.6		Management review		5.6			Management Review	Product information → Information related to aeronautical information service
6			Resource management	6				Resource Management	
	6.2		Human resources		6.2			Human Resources	Purchasing → Acceptance and outsourcing of raw data
	6.3		Infrastructure		6.3			Infrastructure	
7			Product realization	7				Execution of Aeronautical Information Service	Purchasing requirement → Raw data requirement or outsourcing requirement
		7.2.3	Customer communication			7.2.3		User Communication	
	7.3		Design and development		7.3			Design and Development (Excluded)	Purchased product → Raw data or outsourced service
	7.4		Purchasing		7.4			Acceptance and Outsourcing of Raw Data	
	7.5		Production and service provision		7.5			Preparation and Provision of Aeronautical Information	Supplier → Raw data provider or outsourcer
8			Measurement, analysis and improvement	8				Evaluation and Improvement of Aeronautical Information Service	Purchasing information → Raw data provision requirement or outsourced service provision specification
		8.2.1	Customer satisfaction			8.2.1		User Satisfaction	
		8.2.2	Internal audit			8.2.2		Internal Audit	
		8.2.3	Monitoring and measurement of processes			8.2.3		Monitoring and Measurement of Processes	Verification of purchased product → Verification of raw data or verification of outsourced service
	8.3		Control of nonconforming product		8.3			Control of Nonconforming Aeronautical Information	
	8.4		Analysis of data		8.4			Analysis of Data	
	8.5		Improvement		8.5			Improvement	Production and service provision → Preparation and provision of aeronautical information
		8.5.2	Corrective action			8.5.2		Corrective Action	
			Preventive action						Preservation of product → Preservation of aeronautical information
		8.5.3				8.5.3		Preventive Action	Measurement, analysis and improvement → Evaluation and improvement of aeronautical information service
									Nonconforming product → Nonconforming aeronautical information

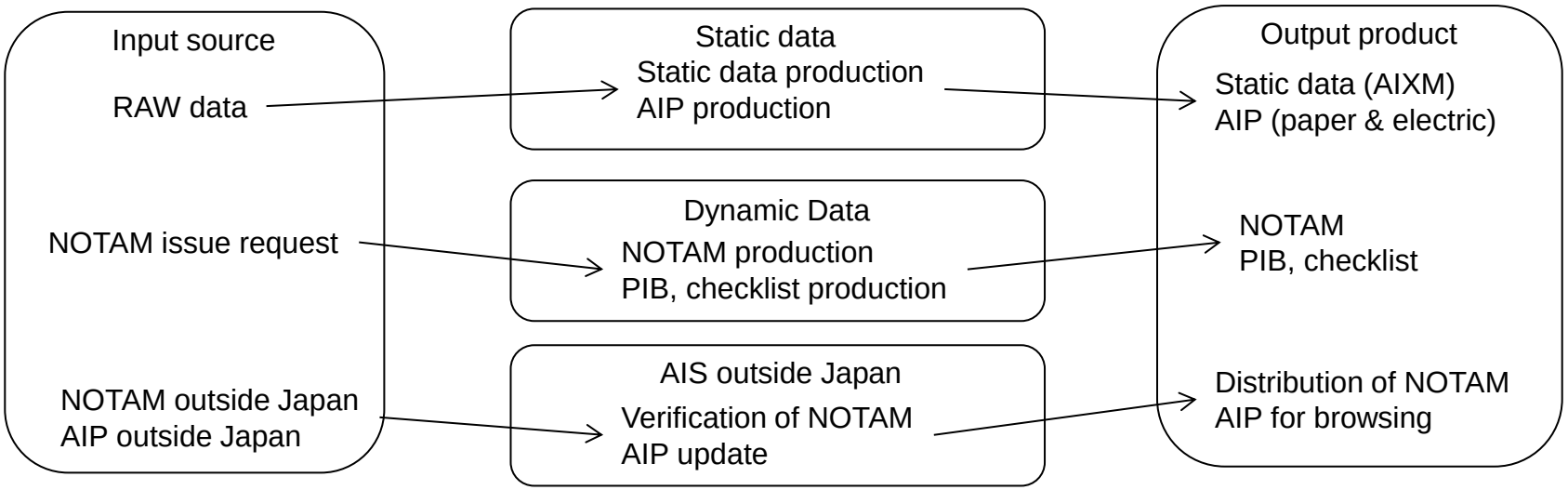
0 Purpose and general description

- Quality Manual establishes the Quality Management System of Aeronautical Information Service Centre (AISC).
- Quality Manual, Quality Policy and related procedures denote that Japan's AIS conforms to the requirements of ICAO Annex 15 and ISO 9001:2008.

1 Application

- QMS applies to AISC's AIS.

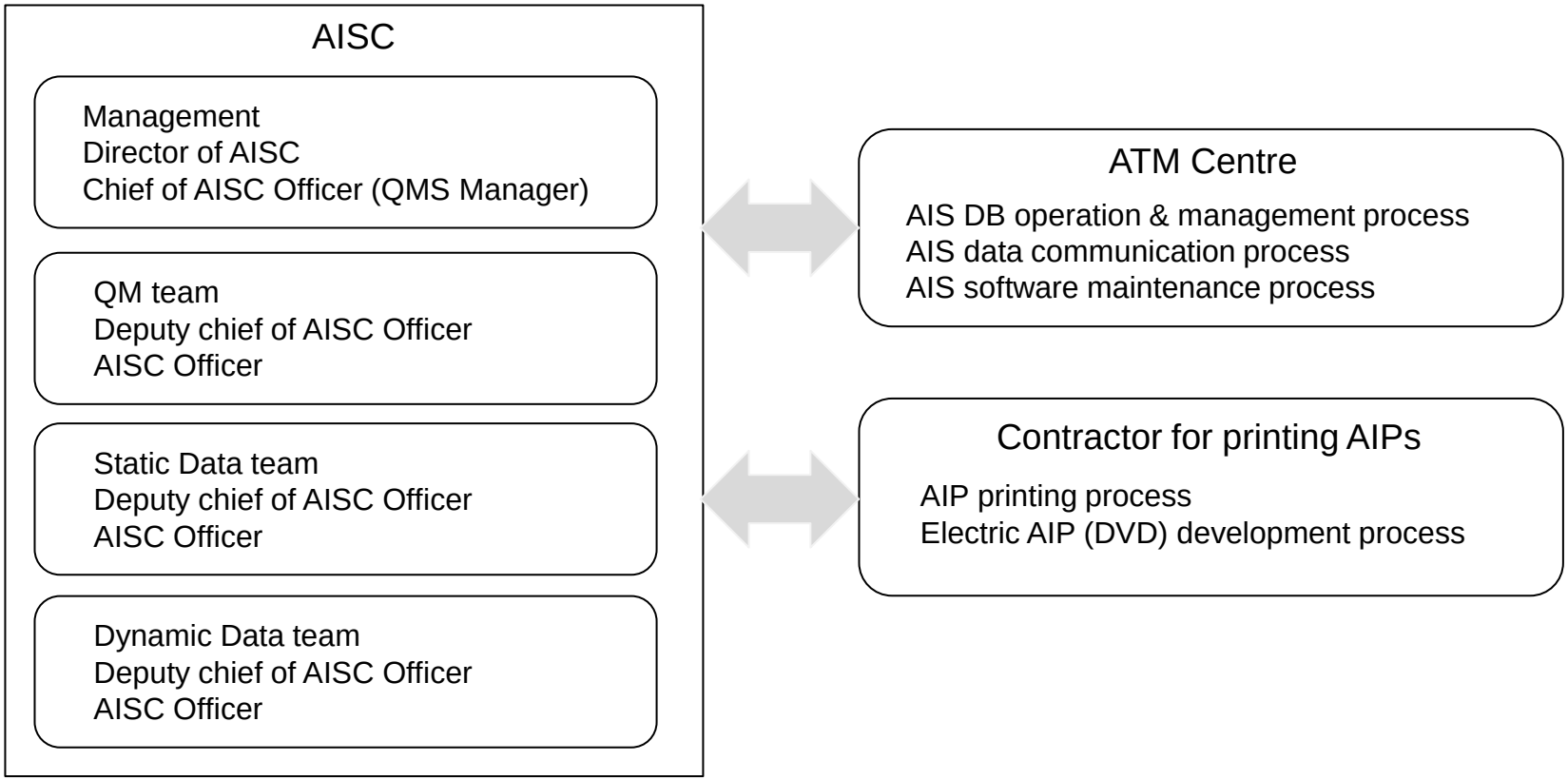
Scope of AIS to apply QMS



1.3 Applicable organization

QMS applicable organization

Outsource organizations



1.4 Applicable standard

- Applicable standard is ISO9001:2008.

2 Normative references

- ICAO Annexes, Docs
- OPADD
- Domestic laws
- ISO9000:2005, Quality management systems – Fundamentals and vocabulary

3 Terms and definitions

(excerpts)

- RAW data – Source information or data that contributes to the creation of aeronautical information
- Static data – Static aeronautical information/data; that is SD, AIP, AIP AMDT, AIP-SUP and IAC
- Dynamic data – Dynamic aeronautical information/data; that is NOTAM
- Top management – In AISC, Director is the Top management
- Nonconforming aeronautical information – Aeronautical information that does not satisfy the AIS requirements

4 Quality management system

- Process matrix chart is established to clarify the relationship between processes necessary for QMS and application to the organization

Team name and process name		Team name					Process name									
								Processes for AIS resources		Processes for execution of aeronautical information service and user-related outsourcing control					Common processes	
Team name and ISO requirements		Center Manager	Management representative	Quality control team	Static data team	Dynamic data team	Management process	Provision of work environment and infrastructure	★Training and competence management	★Static data processing	★Dynamic data processing	★Response to user and solution (problem solving)	Outsourcing control and acceptance of raw data	Measurement, analysis and improvement processes	Control of documents	Control of records
Team name	Center Manager						■	■						□		
	Management representative						■	□	■	□	□	□	□	■	□	□
	Quality control team								□			■	■	■	■	■
	Static data team								□	■		□	□	□	□	□
	Dynamic data team								□		■	□	□	□	□	□
4.1	QMS general requirements		□	○	○	○	□		○	○	○	○				
4.2.1	Documentation requirements (general)		□	○			□								□	
4.2.2	Quality manual		□	○			□								□	
4.2.3	Control of documents		○	□	○	○	○	○	○	○	○	○	○	○	□	○
4.2.4	Control of records		○	□	○	○	○	○	○	○	○	○	○	○	○	□
5.1	Management commitment	□					□									
5.2	Customer focus	□	○	○			□					○				
5.3	Quality Policy	□	○				□									
5.4.1	Quality objectives	□	○	○	○	○	□	○	○	○	○	○	○	○		
5.4.2	Quality management system planning	□	□				□									
5.5.1	Responsibility and authority	□	○				□									
5.5.2	Management representative	○	L				L									
5.5.3	Internal communication	□	○	○	○	○	□		○	○	○	○	○	○		
5.6.1	Management review (general)	□	○				□									
5.6.2	Review input	□	○				□									
5.6.3	Review output	□	○				□									
6.1	Provision of resources	□	○				□	○	○							
6.2.1	Human resources (general)		□	○	○	○	□		□	○	○	○		○		
6.2.2	Competence, awareness and training		□	○	○	○	□		□	○	○	○		○		
6.3	Infrastructure	□	○	○	○	○	□	□		○	○		○			
6.4	Work environment	□	○		○	○	□	□		○	○					
7.1	Planning of product realization		□		□	□	□			□	□					
7.2.1	Determination of requirements related to the product (customer-related process)			□	○	○				○	○	□				
7.2.2	Review of requirements related to the product (customer-related process)			□	○	○				○	○	□				
7.2.3	Customer communication			□	○	○				○	○	□				
7.3	Design and development							(Excluded)								
7.4.1	Purchasing process			□	○	○			○	○	○		□			
7.4.2	Purchasing information			□	○	○			○	○	○		□			
7.4.3	Verification of purchased product			□	○	○			○	○	○		□			
7.5.1	Control of production and service provision			○	□	□				□	□	○	○			
7.5.2	Validation of processes for production and service provision							(Excluded)								
7.5.3	Identification and traceability			○	□	□				□	□	○	○			
7.5.4	Customer property							(Excluded)								
7.5.5	Preservation of product				□	□				□	□					
7.6	Control of monitoring and measuring devices							(Excluded)								
8.1	Measurement, analysis and improvement (general)	□	○				□					□		□		
8.2.1	Customer satisfaction			□								□		□		
8.2.2	Internal audit		□				□							□		
8.2.3	Monitoring and measurement of processes		□	○	○	○	□		○	○	○	○		□		
8.2.4	Monitoring and measurement of product			□	○	○				○	○			□		
8.3	Control of nonconforming product			□	○	○				○	○	□	○	□		
8.4	Analysis of data			L	○	○				○	○	○	○	L		
8.5.1	Continual improvement	□	□				□		○	○	○	○		□		
8.5.2	Corrective action		□	○	○	○	□			○	○	○		□		
8.5.3	Preventive action		□	○	○	○	□			○	○	○		□		

4.2 Documentation requirements

- Documents are controlled by layers.
- First layer consists of Quality manual.
- Second layer consists of supportive documents to Quality manual.
- Third layer consists of external documents.
- Records are taken to be used for traceability, corrective action, preventive action, etc.

Document structure

First layer document

Quality manual

Quality manual provides the scope of the QM system, documented procedures for the management of documents, records, nonconformity, corrective action and preventive action and a description of the interaction between the processes of the QM system.

Second layer documents

Aeronautical information operation manual
Troubleshooting manual
Internal audit manual
Guideline for requesting AIP publication

Second layer documents materialize the procedures described in Quality manual in order for the use of everyday operation.
There are detailed procedures under each document.

Third layer documents

ICAO documents, etc.

Third layer documents are the documents made outside of AISC. These documents are referred to by the First and Second layer documents.

Control of records

Records are taken and controlled to provide evidence of conformity to the requirement and of the operation of QM system.

4.2.4 Control of record

- Record control list is established and maintained.
- Record control procedure is established and performed.

Record control procedure

Identification

- Paper form
  - Sort out by filing. Name of records shall be on the spine of files.
- Electric form
  - Sort out by folder. Name of folders shall correspond to the name of files.

Protection

- Paper form
  - Bringing out from storage site needs to obtain a permission of the person in charge.
- Electric form
  - Backup to external store.

Disposal

- Storage term shall be confirmed.
- Expired records shall be cut or wiped out under the permission of the person in charge.

Records

Storage term

Described in Record control list.

Retrieval

- Paper form
  - Files shall be sorted in chronological order.
- Electric form
  - Files shall be sorted out in chronological order.

Storage

- Paper form
  - Stored in Operation room, office room or storage.
- Electric form
  - Stored in HDD in Office PC. External stores are stored in Operation room, office room or storage.

5.1 Management commitment

- Management shall:
  - enlighten personnel on the importance of satisfying requirements.
  - establish yearly Quality policy.
  - establish yearly Quality objectives.
  - hold Management Review.
  - provide resources.

5.3 Quality Policy

- Quality Policy is set out by Director and notified by QMS meeting and board.
- Quality Policy for FY2013 is as follows:
  - Maintain effectiveness of the process of QMS and improve it constantly.
  - Constantly make efforts to improve confidence and satisfaction of customers.

Quality Policy and Quality Objectives on display.
The boards are displayed at several places in AISC.

5.4.1 Quality Objectives

- Quality Objectives are set out by QM manager and team leaders (Deputy chiefs) and approved by Director.
- Quality Objectives are notified by QMS meeting and board along with Quality Policy.
- Quality Objectives for FY 2013 is as follows:
  - QM team: In case of significant nonconformity, analyze it immediately and if necessary, take corrective action to it.
  - Dynamic team: Set the rate of nonconformity within 0.1% a year.
    - The rate of nonconformity was 0.134% in FY2012.
    - Reduce the number of nonconformity of items A), B), C), D).
    - When in doubt, make inquiries to data provider without hesitation.
  - Static team: Reduce the number of nonconformity by 20% from last year.
    - The number of nonconformity was 34 in FY2012. The goal for FY2013 is 27.
    - Reduce the number of nonconformity that is attributable to RAW data by constantly directing data providers.
    - Improve the discovery rate of errors by doing all kind of things to find errors in the editorial period.

5.4.2 Quality management system planning

- QMS schedule is established every fiscal year (beginning April).
- ISO9001 states that Management Review be held yearly, and AISC additionally holds monthly Management Review.
- QMS meeting is held by QM team to deal with daily QM issues and make input to Management Review.
- Internal audit is held yearly and external audit is held every 3 years.

平成25年度　品質管理計画

2013年4月1日

	4月	5月	6月	7月	8月	9月	10月	11月	12月	1月	2月	3月
25年度総括マネジメントレビュー												● 28日(金)
25年度 定期 内部監査					外部監査機関の内部監査員研修		内部監査員研修 内部監査計画書作成指示		★ 内部監査指示	内部監査		
品質管理担当者会議（業務改善ミーティング）	★ 10日	★ 10日	★ 6日	★ 10日	★ 8日	★ 11日	★ 8日	★ 7日	★ 6日	★ 9日	★ 4日	★ 7日
月例マネジメントレビュー	● 26日	● 22日	● 26日	● 26日	● 28日	● 27日	● 24日	● 27日	● 20日	● 23日	● 20日	● 25日
カイゼン計画進捗状況確認				◎				◎				◎
①力量維持研修				技量保持研修に係る検討委員会			力量維持研修					
②試験員研修				試験員研修								
③SD研修（仮称）								SD研修				
顧客満足度調査 ① エアライン意見交換会 国内A/L							△ 調整	○ 案内	★ 6日(金)			
外国A/L			△ 調整	△ 調整	△ 調整	○ 案内	★ 18日(金)					
顧客とのコミュニケーション AIS REVIEW 締切目標	18日(木)	22日(水)	19日(水)	17日(水)	14日(水)	11日(水)	9日(水)	6日(水)	4日(水)	12月25日(水)	1月29日(水)	2月26日(水)
AIS REVIEW 発行目標	25日(木)	29日(水)	26日(水)	24日(水)	21日(水)	18日(水)	16日(水)	13日(水)	11日(水)	8日(水)	5日(水)	5日(水)

Yearly Management Review (end of FY)

Internal audit
(training for auditor and audit at the end of FY)

Monthly QMS meeting

Monthly Management Review

Review of KAIZEN status

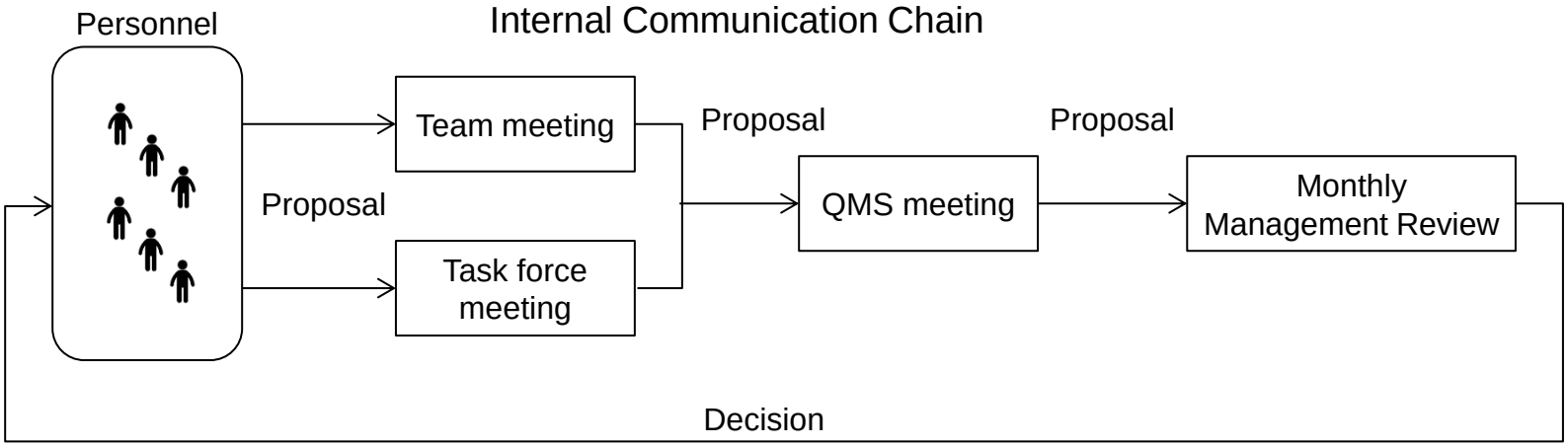
Trainings

Customer communications
(with airlines and military)

Publish date of AIS Review
(public relations magazine)

5.5.3 Internal communication

- All personnel including Top Management have to be involved in QMS. Internal communication is important to ensure the involvement of personnel.
- QMS meeting is held monthly by QM team leader and QM staff in each team. QMS meeting deals with the operation of QMS. Input items to the meeting are listed such as customer feedback, corrective actions and statistics.
- Team meeting is held at least twice a month by team leader and staffs. Report of QMS meeting, notifications and requirement for improvement by staff are discussed in team meeting.
- Monthly Management Review is held by Top Management and team leaders. It reviews the progress of QMS schedule and internal communication.



5.6 Management Review (yearly)

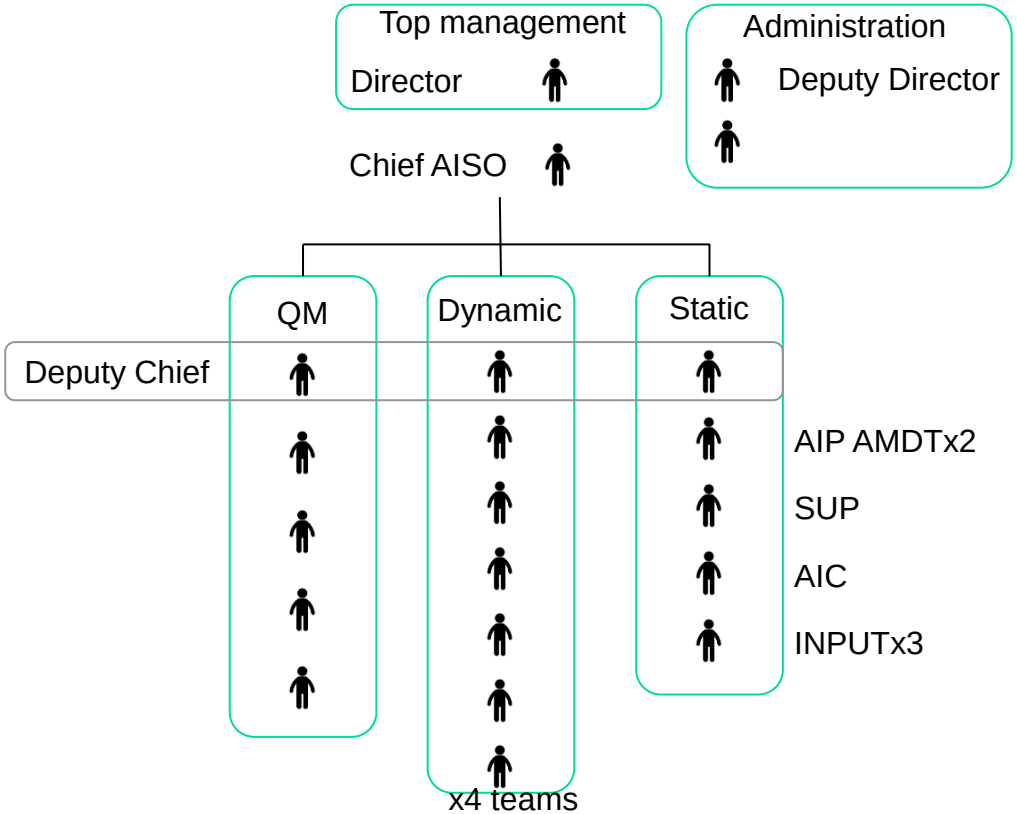
- Director holds Management Review to review the QMS in AISC.
- The input to Management Review is set out in article 5.6.2 “Review input” and AISC complies with it.
- The outputs from Management Review are as follows:
  - The improvement of QMS and its processes.
  - Revision of Quality Policy and Quality Objectives.
  - Improvement of AIS related to customer requirements.
  - Resources needed.
- Direction and revision instructions given by Director as outputs from Management Review will be executed and reviewed at QMS meeting by QM manager.

One of the MR’s output: Improvement plan for FY2013. The plan shows the items to be improved (e.g. revision of QM manual, management of UFN, etc.), period and person in charge.

6.2 Human resources

- Director assigns Chief AIS Officer as QM manager.
- Personnel of QM team, Dynamic teams and Static team are licensee of AIS Officer.
- The education, training, skill, experience and competence of personnel affect the performance of QMS.

Organization



Director establishes Quality Policy and Objectives, holds Management Review and provides resources (human resource, infrastructure and work environment) Chief AISO oversees QMS.

QM team controls QMS activities such as documents, records, nonconformities, trainings, analysis, customer communications, etc.

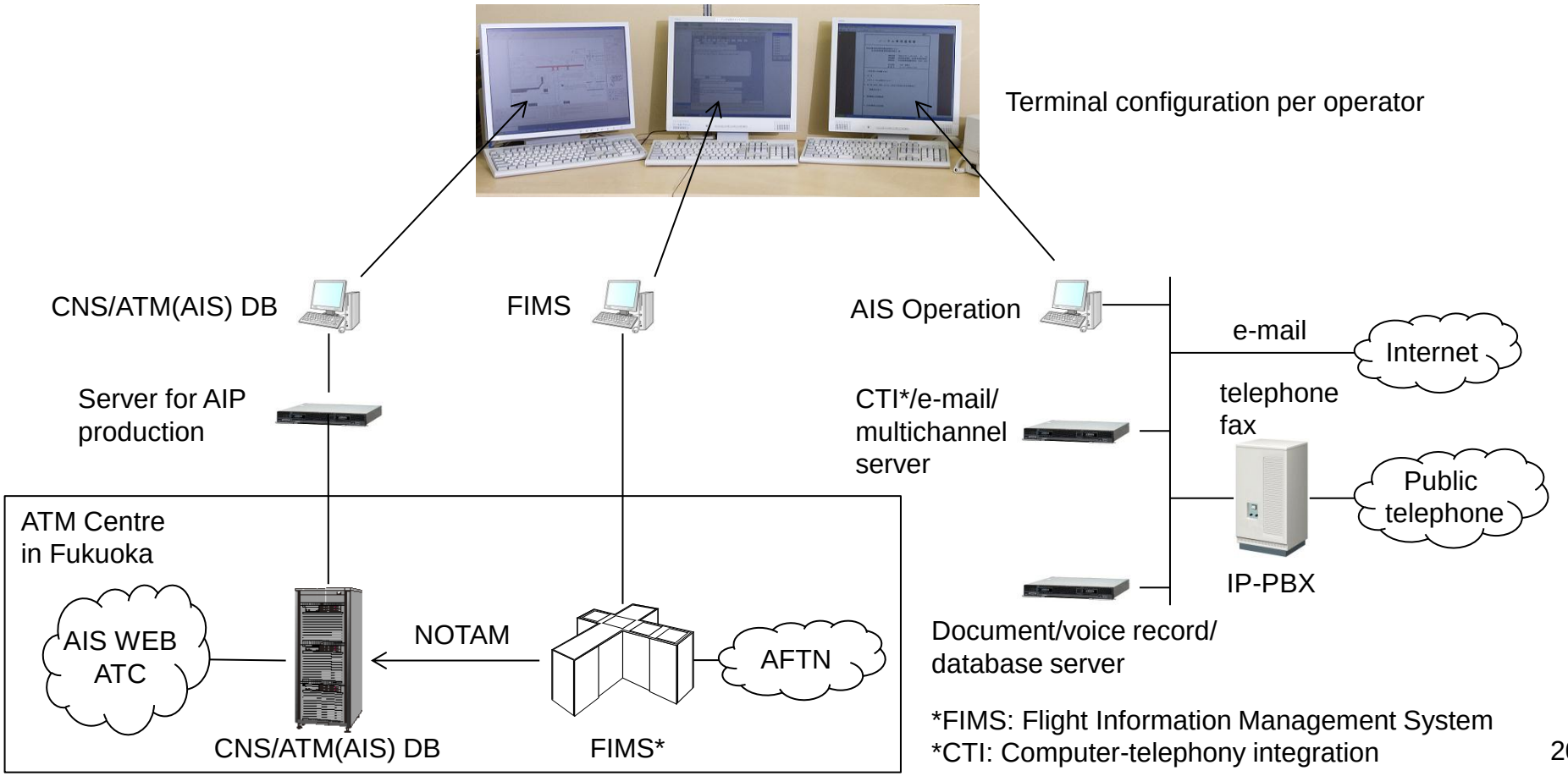
Dynamic teams publish and monitor NOTAM 24/7.

Static team publishes AIP AMDT, SUP and AIC in paper and electric formats. Personnel in INPUT edit the form of publication.

6.3 Infrastructure

- Infrastructure includes operation room, user terminals, and networks.
- AISC maintains infrastructure. The need for change is reviewed in Management Review.

Infrastructure (system)



*FIMS: Flight Information Management System
*CTI: Computer-telephony integration

7.2.3 Customer communication

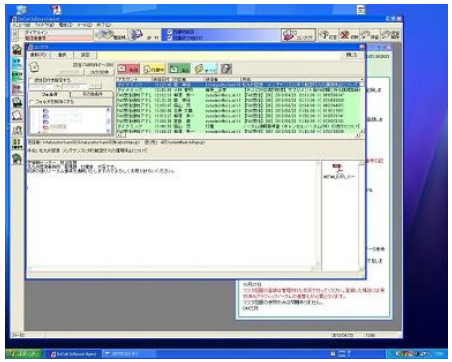
- Information regarding AIS.
  - Personnel routinely provide AIS information through helpdesk (e-mail and telephone).
  - QM team holds yearly customer meeting to get customer requirements, opinions and questions.
    - QM holds meetings with airlines and military.
- Feedback including complaint from customer.
  - Personnel directs feedback including complaint from customer mainly through helpdesk to QM team. When necessary, QM team takes action against the feedback.
  - Feedbacks and actions taken are stored in database and reviewed in QMS meeting and Monthly Management Review.

Airlines meeting held Nov. 2012.
Eleven airlines attended.
Plenary (left) and operation room tour (right).

7.4 Reception of RAW data

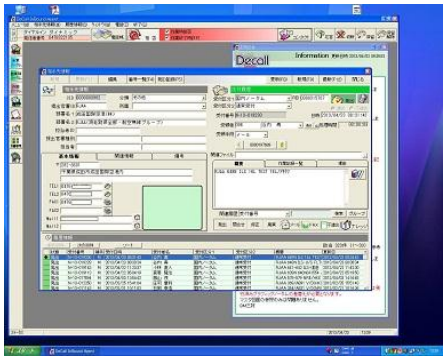
- Provider of RAW data.
  - RAW data provider is selected according to the criteria stated in SOP and SDP.
  - Telephones, e-mails and organizations of RAW data providers are stored in database. Verification is made for the reception of RAW data via fax, e-mail or telephone to prevent spoofing.

Main window



Double click an item

Individual window



- Faxes and e-mails received from RAW data providers are listed in upper half.
- Single click of an item of the list enables the contents of message in lower half. This example shows the e-mail message and attached pdf file.

- Information about registered RAW data provider is shown.
- Person in charge, action taken, etc. are stored with received RAW data.
- List in lower window is the list of received RAW data from this provider.
- Inbound telephone directly enables this window.

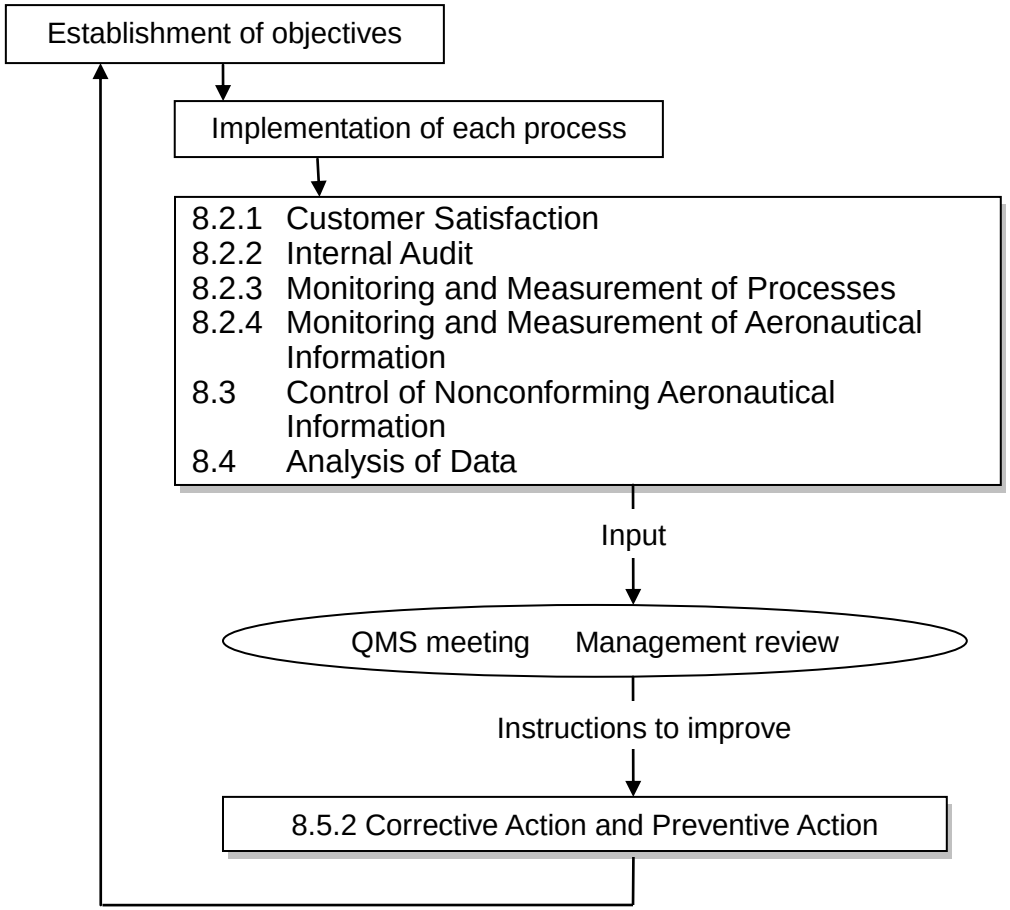
7.5 Preparation and provision of aeronautical information

- Identification and traceability.

AIS product (General aeronautical information package) or service	Product identification method	Product status identification method	Traceability method	
			Processes inside the center	Outsourced processes
Dynamic data (NOTAM, NOTAM web, summarize and NOTAM checklist)	Identifiable by the NOTAM number	Identifiable by recording the product status in the work log throughout the process before issue and attaching it to the raw data Identifiable by the system monitoring function of the FDMS and CNS/ATM database after issue	Traceable by the work log	★ Distribution of dynamic data Traceable by the system monitoring function or journal function of the FDMS and CNS/ATM database
Static data (AIP revision)	Identifiable by the number of the cover page of the AIP revision	Identifiable by recording the product status in the work management function of the CNS/ATM database and the work log throughout the process before issue and attaching them to the raw data and the product Identifiable by the system monitoring function of the CNS/ATM database after issue	Traceable by the work log and the work management function of the CNS/ATM database	★ Distribution of static data Traceable by the system monitoring function or journal function of the CNS/ATM database ★ Printing and distribution of publication Traceable by making a request to keep records of the work history and distribution history in the outsourced service provision specifications
Static data (AIP supplement)	Identifiable by the number of the AIP supplement	Identifiable by recording the product status in the work management function of the CNS/ATM database and the work log throughout the process before issue and attaching them to the raw data and the product Identifiable by the system monitoring function of the CNS/ATM database after issue	Traceable by the work log and the work management function of the CNS/ATM database	★ Distribution of static data Traceable by the system monitoring function or journal function of the CNS/ATM database ★ Printing and distribution of publication Traceable by making a request to keep records of the work history and distribution history in the outsourced service provision specifications
Static data (AIC)	Identifiable by the number of the AIC supplement	Identifiable by recording the product status in the work management function of the CNS/ATM database and the work log throughout the process before issue and attaching them to the raw data and the product Identifiable by the system monitoring function of the CNS/ATM database after issue	Traceable by the work log and the work management function of the CNS/ATM database	★ Distribution of static data Traceable by the system monitoring function or journal function of the CNS/ATM database ★ Printing and distribution of publication Traceable by making a request to keep records of the work history and distribution history in the outsourced service provision specifications
Effective NOTAM list (Monthly summary)	Identifiable by the title, NOF name and the month/year of issue	Identifiable by recording the product status in the work log throughout the process before issue and attaching it to the product	Traceable by the work log	None

8 Evaluation and improvement of AIS

- Continual improvement.



8.2.1 Customer satisfaction

- As one of the measurements of the performance of the QMS, AISC monitors information relating to customer's perception as to whether the AISC's QMS has met user requirements.
- The processes are established for the methods for obtaining and utilizing customer information.

8.2.2 Internal audit

- AISC conducts internal audits at least once a year to determine whether the QMS conforms to the following requirements:
  - The QMS conforms to AIS execution plan: "quality plan".
  - The QMS conforms to ISO9001 requirements.
  - The QMS conforms to the QMS requirements established by this center.
  - The QMS is effectively implemented and maintained.
- QM team takes corrective action immediately on nonconformities found in internal audit.
- QM manager (Chief AISO) is responsible for internal audit.

8.2.3 Monitoring and measurement of processes

Process to be monitored and measured	Important items to be improved	Responsible person	Process monitoring and measurement item	Judgment criteria (Process objectives)	Process control method (Criteria to determine the need for taking corrective action or reviewing quality objectives)
Top management process	Achieve the quality objectives and improve user satisfaction!	Director	Attainment of quality objectives	The rate of attainment of quality objectives shall be 100% on a quarterly basis.	When the rate of attainment of quality objectives calculated monthly does not reach 100% for two consecutive two quarterly periods. (The quality objectives shall be reviewed.)
★AIS resource process (Education, training and competence control)	Ensure that all the staff have a sufficient level of competence!	Quality control team Deputy chief	Status of competence maintained	The examination pass rate for evaluation of task performance capabilities shall be 100% including reevaluation. (Task performance capabilities shall be evaluated annually.)	When the pass rate described at the left does not reach 100% (The relevant staff shall be trained again (corrected). At the same time, the process shall be reviewed and corrective action shall be carried out accordingly.)
★Static data treatment process	Reduce nonconforming products!	Static data team Deputy chief	Status of occurrence of nonconformities in final products (Status of occurrence of failures after issue)	Customer complaints against issued static data shall not exceed three per month.	When the number of complaints described at the left exceeds five for two consecutive months
			Status of correction of AIP and others by NOTAM	The number of NOTAMs issued for correction of AIP and other information shall not exceed three per month.	When the number of NOTAMs issued described at the left exceeds three for two consecutive months
			Status of issue of information that does not observe the AIRAC effective date (Timeliness in Euro KPI)	The rate of occurrence of cases where the period from the time when the user receives the information corresponding to the AIRAC matters to the time when the information becomes effective is shorter than 28 days shall not exceed 10% on a quarterly basis.	When the rate exceeds 10% for two consecutive quarterly periods.

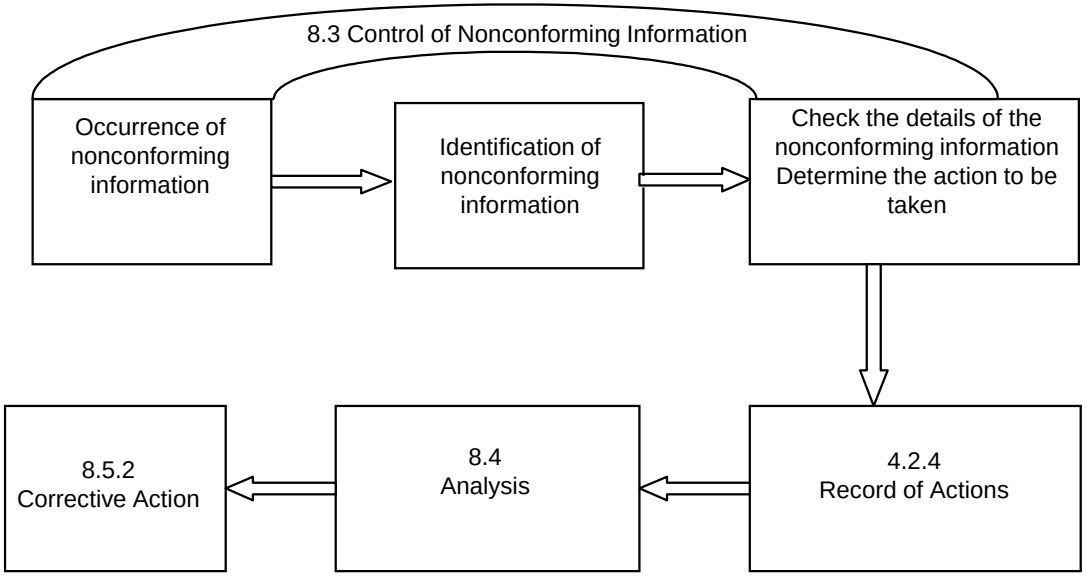
8.2.3 Monitoring and measurement of processes

(cont.)

Process to be monitored and measured	Important items to be improved	Responsible person	Process monitoring and measurement item	Judgment criteria (Process objectives)	Process control method (Criteria to determine the need for taking corrective action or reviewing quality objectives)
★Dynamic data treatment process	Reduce nonconforming products! Reduce the processing time before issue!	Dynamic data team Deputy chief	Status of occurrence of nonconformities in product before issue (Status of occurrence of in-process failures)	The rate of nonconformities (in-process failures) to dynamic data before issue shall not exceed 3% on a monthly basis.	When the rate exceeds 3% for two consecutive months
			Status of occurrence of nonconformities in final product (Status of occurrence of failures after issue)	The number of customer complaints against issued dynamic data shall not exceed five per month.	When the number of complaints described at the left exceeds five for two consecutive months
			Processing period from the time when a report is received to the time when the relevant information is issued	The rate of attainment of a processing time not longer than ten minutes from the time when a report is received to the time when the relevant information is issued shall be 95% or higher.	When the rate of attainment of a processing time of not longer than ten minutes described at the left is lower than 95% for two consecutive months
User response process and ★solution (problem solving) process	Reduce the time required for user response! Improve user satisfaction!	Quality control team Deputy chief	Processing period from the time when a complaint or other user information is received to the time when it is treated	The rate of attainment of a processing time not longer than fifteen minutes from the time when a complaint or other user information is received to the time when the treatment is completed shall be 95% or higher on a monthly basis.	When the rate of attainment of a processing time of not longer than fifteen minutes described at the left is lower than 95% for two consecutive months
			Status of user satisfaction	The rate of the number of user dissatisfaction information (level 2 or below in a five-grade evaluation) to the total number of responses to the questionnaire shall not exceed 5%. (User questionnaire shall be conducted annually.)	When the rate of user dissatisfaction information described at the left exceeds 5%
Measurement, analysis and improvement processes	Reduce the number of nonconformities in the QMS system!	Quality control team Deputy chief	Performance of corrective/preventive actions	The rate of attainment of a processing time of no longer than a month from the time when it is determined to carry out a corrective or preventive action to the time when it is carried out shall be 100%.	When the rate of attainment of a processing time of not longer than a month described at the left is lower than 100% for two consecutive months

8.3 Control of nonconforming aeronautical information

- AISC ensures that information which does not conform to the AIS requirements is identified and controlled to prevent unintended provision.
- The process is established for the control of nonconforming information.



8.3 Control of nonconforming aeronautical information

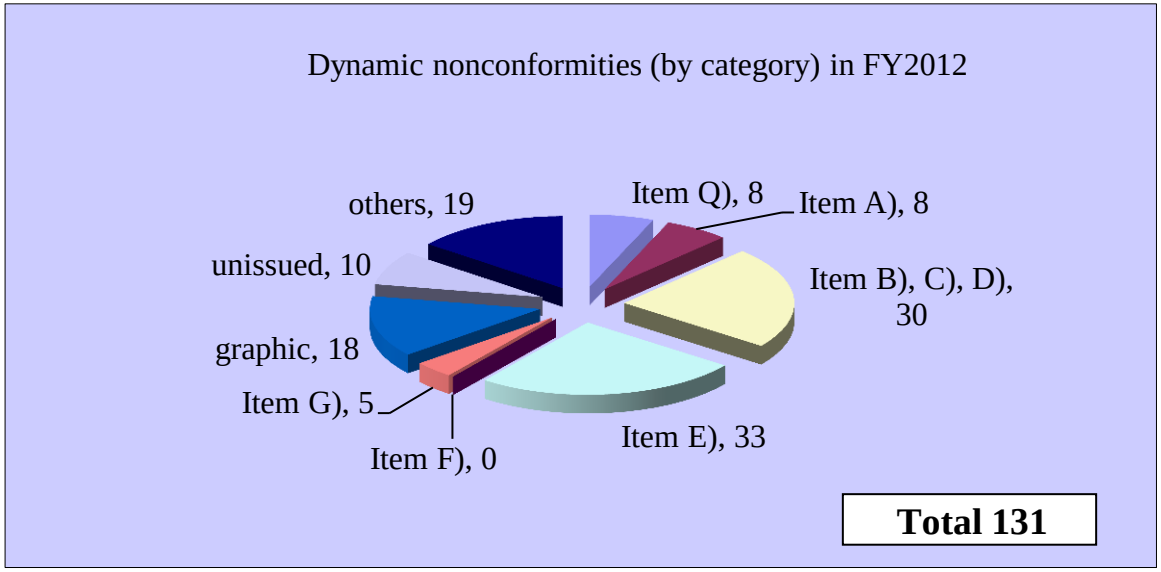
(cont.)

- Nonconforming aeronautical information at AISC includes:
- Significant nonconforming aeronautical information (take corrective action)
  - Information that differs from input
  - Non-NOTAM information
  - Information that has not coordinated with relevant sections
  - Use of improper Q code and item A)
  - Deputy chief considers as significant
- Other nonconforming aeronautical information (conduct analysis)
  - Typographical errors and omissions
  - Use of improper abbreviations
  - Deputy chief considers as nonconforming
- Nonconformities are reported to QM team by “nonconformity report” form.

8.4 Analysis of data

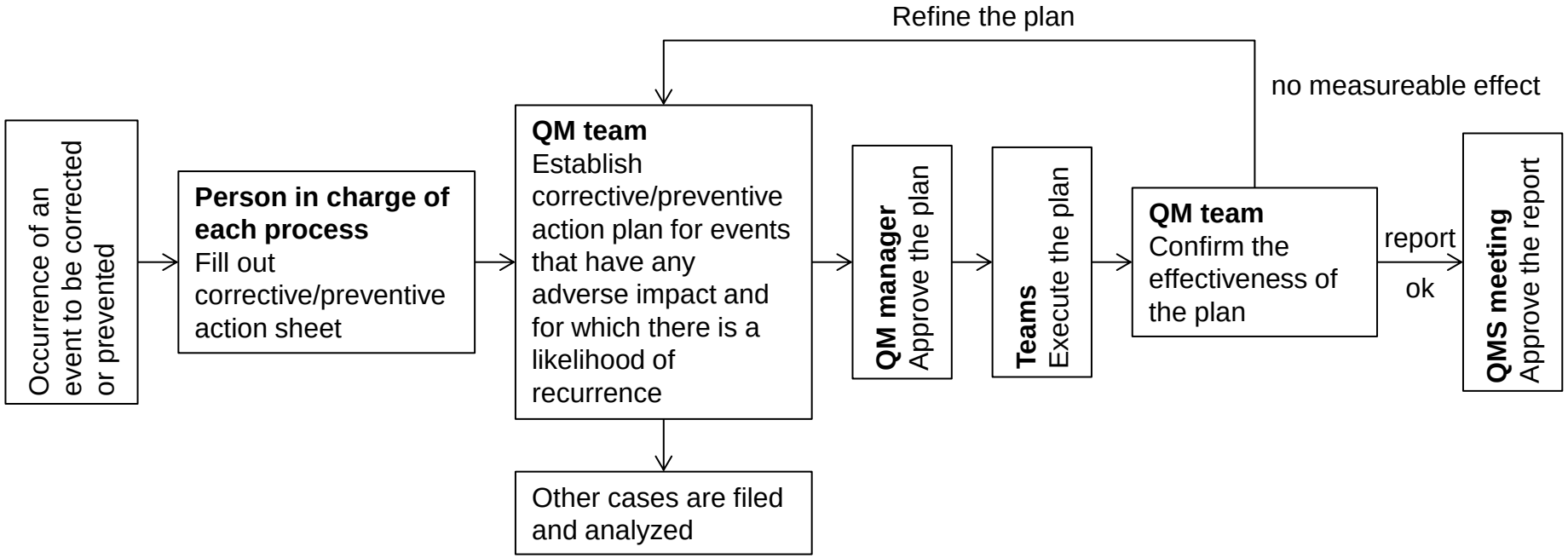
- AISC determines, collects and analyzes appropriate data to:
  - demonstrate the suitability and effectiveness of the QMS and
  - evaluate where continuous improvement of the QMS can be made.
- Data to be collected includes data generated as a result of monitoring and measurement and from other relevant resources.

Example of analysis. Nonconformity rate was 0.134% in FY2012
Item E) includes minor errors such as spelling errors, but item B), C), D) relates to time and it is needed to take action to reduce the number of nonconformity.



8.5.2 Corrective action
8.5.3 Preventive action

- If any nonconformity is detected, AISC takes corrective action to eliminate the cause of the nonconformity in order to prevent recurrence.
- AISC also takes preventive action to eliminate the cause of potential nonconformities in order to prevent their occurrence.



Issues: Nonconformity handling

- When nonconformity occurs, nonconformity process commences. The process includes the interview by QM team with person and team involved.
- The person involved feels apologetic for the failure. In the case of careless mistake, he or she might sense a touch of scolding in the interviewer's attitude. In fact, interviewers are fed up with the recurrence of careless mistakes. The person involved feels humiliated. Sometimes the interview ends in a squabble.
- The purpose of the process is to find the cause of nonconformity. In theory, there is no room for personal attack. Though, the reality is much more complicated than theory.
- A solution is education and motivation. Interviewers need to refine the interview technique. Both parties need to understand the purpose of the process. The process takes motivation to accomplish the goal: reduce the number of nonconformity.

Issues: The limit of PDCA?

- AISC has reduced the number of nonconformity by improving the processes. The ratio of nonconformity against the number of NOTAM issued has been keeping around 0.1% for several years.
- Some of the corrective actions prove effective. High-motive personnel achieve improvements. Though, the ratio hovers around 0.1%.
- Is this the end of PDCA? No, it isn't. One of the famous phrase for Toyota Production System is "Squeeze the dry towel". That means improvement never stops.
- There are many things we have not yet get into. For example, the drastic introduction of computer programs into checking process of NOTAM production would reduce careless mistakes. Establishing the robust data chain with RAW data provider is essential to the stable AIS production. Incorporating the consciousness and biological rhythm into the AIS production processes might smooth the daily variation of nonconformity.
- AISC's improvement never stops.

Thank you