STANDARDS BOARD

PHYSICAL ENCODING GROUP (PEG)

Konstanz, 8 June 2006

Report

1 The 2006.2 PEG meeting was held in Konstanz on 8 June 2006. The list of participants is provided in Annex 1. The main conclusions of the meeting are listed below. An action point list is added as annex 2, showing all the points on which action by a particular party is expected.

I. Opening of meeting and adoption of agenda

POC SB PEG 2006.2 Doc 1 Rev 2

2 The agenda was adopted, but the order of the agenda was changed to facilitate timing

II. Report of last meeting

POC SB PEG 2006.1–Report

3 The IB presented the report of the last meeting. All action points were either completed or will be on the 2006.3 agenda or otherwise appear in the revised action point list - included as annex 2. Those issue(s) that were discussed follow. Note that the reference at the beginning is the original meeting number and paragraph. The discussion is in *italics*

i) 2006.1.15 Redraft reply letter to EICTA for 2006.2 Standards Board.

The IB noted that this item was not discussed at 2006.2 SB due to timing. It is included in the 2006.3 SB agenda. This continues to be a PEG action point

III. Standards Board 2006.2 report

POC SB 2006.2 Report

4 The IB presented the report – which is available on the website. The chairman especially noted paragraphs 73-75 titled *Cooperation with ISO*, showing the positive results of the of the recently held first meeting between the Director General of the UPU and the Secretary General of ISO.

5 The IB noted the importance of section *IX - Metrics for standards usage*, a presentation by IPC. The presentation is related to using existing databases to provide information on the degree of usage or compliance to standards. The presentation by the IPC to the Standards Board, as an example of the data available, is included as annex 4. The IB noted that this presents considerable opportunity to help to manage standards developments and suggested that the working group members to bring forward any suggestions that they may have.

6 The next meeting of the Standards Board will take place in Paris 11 July 2006

DOT.PN
Gau
16.6.2006

IV. IATA/UPU Group on EDI Issues report

POC SB IATA/UPU 2006.1 Report

7 The chairman gave a briefing of the meeting that was held on 30 March and explained that there is a planned sub-group meeting at IATA in September to address some of the issues raised and that other issues are covered in the DCG meeting agenda being held the following day.

V. RFID Forum – Update Report (USPS)

POC SB PEG 2006.2 Doc 5

8 It was noted that, in addition to the meeting document, the IB had sent PEG members a document from China Post outlining an RFID application that they now use. It is included as annex 5.

9 There was extensive discussion on the topic of the RFID Forum.

10 The IB mentioned the comments made by the Director of Operations and Technology of IPC at the Standards Board, specifically:

i) that such a forum should not focus on the technology per se, but rather should focus on the business applications for RFID (current and potential) applicable to the postal industry.

ii) that, in fact, the postal industry is not so far behind as the discussion at the Standards Board indicated. The extensive use of RFID in letter mail testing, and now having it linked to terminal dues payments could well be considered quite an advanced and practical use of RFID.

11 USPS advised that they have already had discussions with the Director of Operations and Technology of IPC as regards forum moderator and responsibility for the content of the forum program. It was agreed that this aspect (ie forum moderator and organization of forum content) will be a USPS/IPC action item.

12 The session topics in general would be as follows:

a) Current status of technology – and where is it going
b) Industry
   i) applications
   ii) standards
c) Business Processes and Applications – including economic models

13 After discussion, the PEG concluded that the forum should be a full day and should involve representatives from the post and from other industries as well.

14 PEG members were asked to share their own experience in RFID and also to provide any other suggestions. The following comments were noted:

FR: that the forum could include the regulatory aspect
CEN (Siemens) : aware of applications in Switzerland and Germany and will investigate.
CEN (Pitney Bowes) :the forum could include RFID standardization issues such as between the EU and USA.
USPS: the forum could include issues such as economics (benefit/cost analyses) and data security issues.
IB: Provided the required meeting rooms are available on the anticipated date, the UPU could be a possible venue and the UPU could handle the logistics of the meeting. Also that the document from China Post should be reviewed.

15 It was noted that if a budget is needed to conduct the forum, such as to accommodate guest speaker's expenses, then this should be considered.

16 On the issue of the timing of the forum, the USPS indicated that it should be held as soon as possible, certainly in 2006, because of the urgency of the post becoming better informed concerning this technology.

17 It was agreed that USPS, along with IPC, will take the lead on this topic, initially for presentation of the program to the 2006.3 Standards Board. (AP:USPS/IPC).

(IB Note: Agenda item XIII (also related to RFID) was discussed immediately after this topic. It is suggested that the reader refer to topic XIII)

VI. Receptacle label content review (IB)

POC SB PEG 2006.2 Doc 6

18 The IB provided the background of this agenda item

19 Although this issue is currently in the PEG. The IB suggested that this would be better positioned in the DCG, for the following reasons:

a) PEG normally deals with item level issues including item dimensions, data encoding such as item barcodes, cancellation markings, franking etc. DCG normally deals with issues that involve data systems in administrations. This issue is more of the latter type than the former.

b) There are (and likely will be) closer linkages with other DCG topics than with other PEG topics.

c) The DCG members and the meeting schedule is arranged to accommodate parties that have involvement in receptacle labels. This includes the CAPE Steering Committee, the EMS Task Force and the EMS Unit of the IB.

d) In general, although almost all PEG members are DCG members, it will be easier for postal administrations that are not members of any Standards Board working group to follow the developments in this issue.

20 IPC did not agree that this issue should be moved to DCG as the current PEG mandate includes labels.

21 The IB then presented an initial approach to this issue as follows:

As an initial work activity, the IB would develop a report showing:

a) the current variants of label contents used by as many postal administrations as possible
b) the data contents and issues that arise.

In compiling this initial document the IB would solicit the support of working group members to provide sample labels from a destination standpoint and to assist in preparing the document.

In effect, an ad-hoc group from within the working group would be used to document the current situation and initial findings. A report would be tabled at the next working group meeting.

The PEG agreed with this approach. The IB will coordinate the work effort to start collecting current-state information with the support of the working group members. (AP:IB)

VII. Print quality of 2-D symbols – parameters required for CEN TS 14826 compliance – oral report (CEN Pitney Bowes)

22 The IB covered the background of this issue as follows: *At PEG 2006.1, USPS presented the requirement for a standard covering print quality of 2-D barcodes. After discussion, it was felt that there may, as of very recent, be a new ISO standard based on CEN standard 14826 that will go a long way to meeting the postal requirement. CEN had agreed to investigate the situation with respect to CEN standard 14826 vis-à-vis ISO and advise PEG. Following this, a suitable course of action can be determined.*

23 CEN (Pitney Bowes) indicated that they did not have access to the required documents to resolve this.

24 It was agreed that this would become an IPC action item (AP:IPC).

VIII. Update of S18b, S18d, S18e (IPC)

POC SB PEG 2006.2 Doc 8

25 IPC explained the background, summarized as follows:

It would now be appropriate to modify S18d and S18e to refer to S48.

The ID-tag working group has agreed that, to accommodate the Standards Board request, the definitions of flat and small letter should be removed from S18d.

The ID-tag working group has also now completed its work on the development of a specification for a 4-state routing code designed for use in association with S18e ID-tags. Some changes to S18e are required to support such combined use.

It had been pointed out that S18b could be interpreted as recommending the use of inks that might not be complaint with health and safety regulations in some countries. The ID-tag working group propose to modify S18b to remove this implication.

26 The PEG endorsed the proposals for modification of S18b, S18d and S18e, actioning IPC to present a formal update proposal to SB meeting 2006.3. (AP:IPC).

IX. Draft of P27- 4-state routing code (IPC)

POC SB PEG 2006.2 Doc 9

27 IPC explained that the ID-tag working group has now completed a draft specification for P27, 4-state routing code, as approved as a work item by Standards Board meeting 2006.1. The ID-tag working group has now completed a draft specification.

28 FR raised an issue concerning the phrase "…or within the geographic region of another operator with which it has a bilateral agreement allowing it to apply Postal-4i routing codes…".

FR suggested that is needs to be clarified as to how the bilateral agreements work in cases when an initial delivery operator hands items over to another operator for delivery.

29 After discussion on the above point. PEG endorsed this to be submitted to the SB 2006.3 for status 0 approval, with an adjustment made for the above-noted issue(AP:IPC

X. Update of the Standards Glossary (IPC)

POC SB PEG 2006.2 Doc 10

30 IPC presented a proposed update to the Standards Glossary. This came from the Standards Board noting that the specification contained a definition of flats which differed from that in the Standards glossary and requested that this be clarified. The substantive change is to define a flat and a small letter as follows:

3.169 small letter: flexible letter-mail item which satisfies UPU Letter Post Manual [1] article RL 128 size and weight limitations for standardized items or is otherwise small and thin enough to be automatically processed on the small letter sorters used by the delivery post

3.68 flat letter-post item which is too large, too thick or too stiff to qualify as a small letter, but which has a size of 229 mm by 334 mm or less; a maximum thickness of 20 mm and a maximum weight of 500 g or can otherwise be automatically processed on the flat sorters used by the delivery post

31 In discussion IB noted that, with this definition, an item being defined at origin as a small letter or as a flat depends, to a degree, on the delivery address of the item.

32 There was also discussion concerning the aspect of "flexibility" - as to whether flexibility should be an element in the definition.

33 The PEG approved the proposed update of the glossary, with an adjustment to handle the aspect of flexibility, for submission to the DCG meeting being held the following day .

XI. Update and Split of S19 - Encoding on envelopes (IPC)

POC SB PEG 2006.2 Doc 11

34 In introducing this topic, IPC indicated that, in approving S19-7, the Standards Board asked that the specification be split into parts, with each part having a single standards status.

35 The ID-tag working group has now reviewed the standard and proposes that the standard be split into 4 parts:
A General concepts and definition of the coordinate system
B Areas used by postal handling organisations for the encoding of information
C Areas used for postmarks, indicia and service endorsements
D Areas used for addresses and for customer encoding printed together with the delivery address

36 Drafts for parts A, B and C were submitted. Part D remains to be developed

37 FR raised an issue concerning the title of S19b "Encoding on Envelopes". However after discussion, a more suitable title could not be detemined.

The PEG then endorsed the proposed changes, actioning IPC to present a formal update proposal to SB meeting 2006.3 (AP:IPC).

XII. PEG work plan

POC SB PEG 2006.2 Doc 12

38 This agenda item was not covered due to timing. Annex 3 thus has the work plan resulting from PEG 2006.1. PEG members are asked to submit changes to the work plan for discussion at PEG 2006.3. (AP:All)

XIII. Draft Specification of the 433 MHz RFID air interface (IPC)

POC SB PEG 2006.2 Doc 13

39 In introducing this topic, IPC indicated that it would now be appropriate to continue the work of developing air interface standards, in particular by standardising the interface used by the 433 MHz devices used in the UNEX performance monitoring system. It is understood that there are proposals for the development of a 433 MHz standard that could potentially result in the development of devices that interfere with those used in the UNEX system. The best defence would appear to be the existence of a UPU standard in this area. This could then be submitted as a candidate ISO standard, forcing it to ensure compatibility between the RFID devices in use and any proposals for an alternative 433 MHz interface

40 PEG approved the submission of a proposed working draft standard to SB meeting 2006.3 (AP:IPC).

XIV. Any other business

41 There was no other business.

XV. Date and place of next meeting

42 The chairman explained that consideration is being given to having the next meeting at IATA in Montreal rather than in the USA as originally planned. This is to integrate with planned sub-group meetings between UPU and IATA The IB will contact IATA to ensure all the arrangements can be in place and will advise the chairman and members as soon as possible.(AP:IB)

43 Thus the next PEG (and EXG /DCG) meetings are:

PEG 2006.3 Montreal (IATA – to be confirmed) 13 September PM, 14 September and 15 September AM 2006
PEG 2006.4 Berne, 7 and 8 December 2006
PEG 2007.1 Venue TBD, 1 and 2 March 2007
PEG 2007.2 Venue TBD, 31 May and 1 June 2007
PEG 2007.3 Venue TBD, 13 and 14 September 2007

Himesh Patel
PEG Chairman

Annexes:
1 List of participants
2 Action Point List
3 PEG work plan
4 Metrics for standards usage
5 Document from China regarding RFID

Physical Encoding Group PEG 2006.2
8 June 2006 Konstanz
List of attendees

Organisation	Name of participant	e-mail address
US-USPS (chair)	Himesh Patel	himesh.a.patel@usps.gov
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UPU/IB	Brian Gaudette	brian.gaudette@upu.int

Apologies:

There were no apologies

Action Point List from PEG 2006.2 POC SB PEG 2006.2 Report Annex 2

*Note: PEG references start at 101, EXG at 201, DCG at 301

Ref	Meeting number and paragraph / action	Action by
101	2006.1.15 Redraft reply letter to EICTA for 2006.3 Standards Board	IPC
102	2006.1.28 Investigate with Finland and Germany to determine if there is enough evidence for S26 to qualify for status 1.	IPC
103	2006.1.17 Present proposed RFID forum program to SB 2006.3	USPS/IPC
104	2006.2.21 With PEG members assistance, prepare initial report for receptacle label content review	IB
105	2006.2.24 Investigate status of ISO Standard as related to print quality of 2-D symbols.	IPC
106	2006.2.26 Submit proposals for modification of S18b, S18d and S18e to SB2006.3	IPC
107	2006.2.29 Submit draft of P27- 4-state routing code to SB 2006.3	IPC
108	2006.2.37 present a formal update proposal for split of S19 - Encoding on envelopes to SB 2006.3	IPC
109	2006.2 38 submit changes to the work plan for discussion at PEG 2006.3	All
110	2006.2 40 Submit proposed working draft specification of the 433 MHz RFID air interface to SB meeting 2006.3	IPC
111	2006.2.42 Confirm the next meeting logistics with IATA and advise PEG members.	IB

PEG Work Plan

Note: PEG 2006.2 did not discuss the work plan due to timing. Thus there is no change to content from PEG 2006.1

Item Number	Task	Activities	Outputs	Lead	Completion Date
1	ID Tags	Re-structure S19 and specification for FIMs and address block locator ▪ ▪	Modification to S19	IPC	June 06
		Monitor and document item tracking pilot	Status reports	ID Tag Steering Committee	Ongoing during pilot
		Monitor testing of S18e	Status 1 Application	IPC	TBD
2	License Plates	Monitor implementation efforts by EPG partners	Ongoing evaluation reports		Ongoing
			Status 1 proposal for S26		June 06
3	Aggregate Tracking (TS 14441) (P10)	Submit to SB for endorsement		PEG	Oct06
4	Colour & Durability of Franking Impressions	Monitor testing	Status 1 proposal	PEG / USPS	Oct06
5	Receptacle Asset Numbering	Add informative annex based on Portuguese implementation plus warning about print quality	Proposed draft S37-5	IPC	Oct06
		Add S37 representation in RFID medium (with DCG and RFID ad-hoc group)	Prepare plan	Chairman	TBD
		Monitor and document implementation efforts/results	Status Reports	PEG	Ongoing
		Develop proposal for Status 1	Status 1 Proposal	PEG	TBD

Item Number	Task	Activities	Outputs	Lead	Completion Date
6	RFID	Develop postal view to complement applications “views” in ISO 18000.1	Contribution to ISO 18000 or update to S20	TBD	TBD
		Review S23 parts and eliminate or modify to reference ISO 18000.x	Revision of S23	TBD	TBD
		Develop specification for 433 MHz Kasten-Chase RFID device	Contribution to ISO 18000.7	TBD	TBD
		Review and revise S21			TBD
		Review existing implementation and define future plan	Project Plan	RFID WG/PEG	TBD
		Circulate and seek participants for Aggregate Tracking pilot	Proposal, project plan, participant commitments	IPC	TBD
7	Digital Postage Marks	Identify range of existing specifications to identify what are the range of obligations that may or may not comply with S28/S25	Report on existing specifications	IPC	Oct06
		Assess compliance with existing S28, S25 specification	Report on compliance of identified specifications	IPC	Oct06
		Build consensus and identify single specification for Digital Postage Marks (Pending response from Meters Group concerning joint participation)	Modification or replacement of S28, S25	IPC	Dec06
8	FIM	Prepare test plan and status 0 application	Status 0 application	IPC	June 06
9	Address Block Locators (ABL)	Prepare test plan and Status 0 application	Status 0 application	IPC	June 06
10	Print Quality of 2-D symbols (CEN TS 14826 / ISO xxxxx)	Identify parameters required for CEN TS 14826 compliance	S28 update if necessary	USPS	Dec06
11	License plate for other products		Overall customer bar coding standard (status 0 proposal)	CBC Group	Mar 06

Item Number	Task	Activities	Outputs	Lead	Completion Date
14	P20 Parcel labels	Develop draft standard for machine-produced parcel labels Define requirements (ARP)	Need a new coordinator	IB (Parcels Programme)	TBD
15	Review UPU forms	Determine which forms need to be revised to include IMPC codes and organisation names	Identify other forms	IB	June 06
16	S40		Letter proposing ISO endorsement Proposal for hosting software	IPC / DHL IPC	June06 June 06
2005.3-1	Investigate/Consider IDs for ordinary parcels	Ask the parcels what they are doing in the context of this resolution	Decide if there is a need to pursue this initiative	IB (Parcels Programme)	Done
2005.4-1	Update S47 to incorporate use of 2d symbols, water resistance, substraight and ink	Update S47	Updated S47	IPC/USPS	June 06

POC SB PEG 2006.2 Report Annex 4

POC SB EXG 2006.2 Report Annex 4

POC SB DCG 2006.2 Report Annex 4

Ross Hinds
UPU Standards Board
Berne
29 March 2006

International Post Corporation

Metrics for Standards Use

Metrics for Standards Usage

- Use of standards the measure of success
- Automated measures preferred
  - EDI messages & associated codes
  - Physical encoding
  - Financial services
- Readily available manual data
  - Data definition & encoding

International Post Corporation

Message use examples
(from IPC databases for December 2005)

Letters	PREDES v1	PREDES v2	PREDES v3
Messages	15,000 (12%)	108,000 (88%)	≈100 (0%)
Admins	14	42	2

Items	EMSEVT v0	EMSEVT v1
Messages	44,000 (15%)	270,000 (85%)
Admins	86	101

SB POC PEG 2006.2 Report Annex 5

APPLICATION OF RFID TECHNOLOGY TO DISPATCH PROCESSING IN CHINA POST

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China Post

Abstract

As one of the sub-projects of the national high-tech research and development program called the 863 Program, China Post started a Radio Frequency Identification (RFID) application project in Shanghai Post at the beginning of 2005. The main objective is to use RFID tags in Express Mail Service (EMS) mailbags to increase the automation and computerization of EMS dispatch processing with Postal Branch Operation System (PBOS) and Mail Center Operation System (MCOS) and sorting facilities. Based on this, a general plan of application RFID technology solution for whole China Post will be formulated. By the December 2005, the Shanghai RFID project has passed the initial acceptance checks and begun test operation. The paper introduces the situation of the project and the initial result and prospected RFID application in other different fields for Postal industry.

Background

The mail processing of China Post includes receiving of mail in branch offices, transportation in local city, sorting in mail center of origin, transportation by main route, sorting in mail center of destination, transportation in destination city and delivery. The tasks such as receiving and opening of mailbags, sorting and billing of mails, dispatching of mails, sorting and forwarding of mailbags should be completed in mail center. *Three Basic Principles* are constituted in China Post to ensure high quality service, which includes marking after checking, verifying during transfer, and balance checking. Therefore, mail processing in China Post has such characteristic as complex technological processing, short processing time, credible communication quality, high-level service of inquiry.

In recent years, a strategy called "to Develop Post through Science and Technology"is being implemented in China Post. Bar code has been used comprehensively in mail processing and Postal Integrative Computer Network all over the country is built to transfer data, voice and picture. With the application of the sub-systems such as Postal Branch Operation System, Mail Center Operation System and Dispatching System of Mail Transportation, mechanization, automatization and informatization of mail processing in China Post are increased observably. However, because of the limitations of bar code identification technology, such as limited reading range, influences of masking, folding and defile of bar code labels on reading result and the necessity of the manual scanning of bar code labels one bye one, it's difficult to realize the automation process of transshipment and sorting of dispatches, which results in the slow mail transfer speed and low-level management. By contrast, RFID has farther reading distance and does not need to "see" the label.

Moreover, RFID does not need someone to assist the data capture process. It can change the information of label and in hard surroundings it still works well. RFID can also read many labels one time with higher speed. All of these characteristics make RFID technology suitable for post operation. Therefore, RFID technology becomes one of the important technologies in China Post's development of science and technology plan named 10th Five-year Plan. At the beginning of 2005, the project of the National 863 program, *Research on key technology in RFID* started up. By the assistance of Ministry of Science and Technology and Chinese Academy of Sciences, a project called *Application of RFID technology in EMS dispatch processing in Shanghai Post* was started as the first step. By the December 2005, this project passed the initial acceptance checks and has been put into test operation.

Details of the experiment

1 The composition and distribution of RFID system

The EMS dispatch handling process includes receiving and dispatching of mail in computerized post office, transportation in local city, and receiving, opening of mailbags, sorting and billing of mails, dispatching combination and forwarding of mailbags in Shanghai Huqingping EMS Process Center, transportation in local city, receiving and sorting in Hongqiao Airmail Process Center and New Railway Station Transshipment Center, transportation by main route. RFID system is composed of hand-held readers or fixed RFID readers and their host computer systems, tags-circulation management system and tags all over computerized post offices, processing centers and transshipment center.

Details of the experiment (continued)

2 Technical Solution

2.1 Selection of frequency

The reading range of RFID in EMS dispatch processing should be about 3-4 meters. Sometimes many tags must be read simultaneity, so UHF RFID system is used.

2.2 Type of tag

(1) Passive tag is used to reduce the cost of purchasing and maintenance.
(2) Read-only tag and re-writable tag are both used.

Read-only tags with 6 character barcode information are used in processing between dispatching in the computerized post branches and opening of the mailbags in EMS processing center . In computerized post branches, the data in tags is binding with barcode information and dispatch information. By this way, the existing information system based on barcode identifying in more than 600 computerized post branches is compatible with RFID system. In post branches, no RFID reader is needed and old bar code equipment can still be used to reduce cost.

Re-writable tags are used in processing between dispatching of mail in Huqingping EMS Process Center and dispatch processing in New Railway Station Post Transshipment Center. The re-writable tags record 30 byte dispatch information needed in Post operations. Like the barcode information in existence, this information is suitable for the transportation of main postal routes.

2.3 Process conditions

The UHF RFID tags can't be identified with 100% accuracy now. So we should find out the right mail process conditions, under which RFID system can easily read many tags simultaneity in long distance even with some obstacles. By verifying, the data is captured when mailbags

are unloaded from vehicles one by one; During the sorting of mailbags, data is captured when the mailbags are in loading machine of crossing-belt sorting machine to ensure RFID system's reading accuracy. Thus worker's hands are released from that work, the operation process is simplified and the efficiency is improved.

2.4 Design of application information system
When a new distributed application information system is established , the old information network resource must be utilized sufficiently. In Computerized Post Branches, the bar code data, RFID tag's ID and operation information are all bound. In EMS processing center, RFID system receives the receiving and forwarding data from operation system through data interface. After acquiring and converting the data, RFID system send the operation data to interrelated operation system, so RFID system is integrated with existing operation system. The network framework of RFID application system can be shown in Fig 1.

Details of the experiment (continued)

2.5 Circulation of the RFID tags
The tags-circulation and distribution management system is built and then invalid tags can be found out and discarded by the system. The system can analyze the efficiency and benefit of RFID application system with the data collected from all sectors.

3 Processing flow
The processing flow can be shown in Fig 2.

3.1 Operation in postal branches
In branches, the bar codes of loose mail are scanned, and the acceptance information is acquired to create dispatching information and list information automatically. RFID tags' ID information is obtained through scanning the bar code of tags which is bound with RFID tags' ID. Then this ID information is bound to dispatching information and list information. Subsequently, the operators dispatch mailbags with read-only tags. After dispatching, all of this information is transferred to higher level collecting point and EMS processing center via Postal Integrative Computer Network.

Mailbags are transferred to collecting point by each post branch, in each collecting point, hand-held RFID readers are used to capture the RFID data for checking and verifying. Then the mailbags are transferred to Huqingping Processing Center by regular vehicles.

3.2 Operation in Huqingping Processing Center
(1) Receiving of dispatch
There are some fixed RFID readers installed above the platform or conveyer belt in the processing center. When the regular vehicles arrive, the mailbags are unloaded, RFID tags' ID are captured automatically and are checked with delivery bills information from network to complete receiving efficiently. Fig 3 shows the photo of the platform in Huqingping processing center. We can find that some RFID reader's antennas are fixed above the platform.

(2) Opening of mailbags
Existing opening operation is reserved. The read-only RFID tags are recycled after opening of mailbags

(3) Dispatching

Details of the experiment (continued)

After the opening of mailbags, the loose mails are sorted with crossing-belt sorting machine. The scanner of sorting machine reads 13 character identifiers of the mail to get the information of destination from information network, and the mail will be sorted automatically. According to the mail's weight, volume, list information and 30 characters information of dispatch are created automatically. The workers print list and put it into mailbag after verifying. RFID reader writes the 30 characters dispatch information acquired from LAN into the re-writable tag, and workers fasten the RFID tag.
When the task of mail processing center is completed, the related data will be uploaded to information center immediately according to the regulation.

(4) Handing over & forwarding of outgoing dispatch
The process of dispatch forwarding is contrary to process of receiving. Fixed reader is installed above belt conveyor or the platform, so it can capture the information of re-writable tags and check the transshipment delivery bill information automatically when forwarding dispatches cross by RFID range.

3.3 Hongqiao Airmail Processing Station and other transshipment stations
When the mailbags arrive in Hongqiao Airmail Processing Station, the dispatch information is captured and checked automatically by the RFID reader which is installed on the loading machine of crossing-belt sorting machine, then the sorting is achieved swift.

In other transshipment stations, the checking is achieved automatically with the information captured by fixed RFID readers over the platform.
With the use of RFID in EMS mailbags process, the automation of dispatch information checking and sorting in multi-process is achieved, and the mail flow and information flow are integrated in the whole process.

4 Effects

● The identification accuracy of uploading and unloading is 99.4%; the identification accuracy of sorting is 100%(value of the first exam)

● The efficiency of EMS dispatch checking and sorting processing increases by 20%.

● The automation of forwarding information checking and sorting information capturing is achieved. The handing over of EMS department and transportation department will be simplified, clearly and efficiently.

● The collection of time information automatically in all process is achieved, which provides support to the optimization of mail logistics network .

● By use the RFID technology, not only the better inquiry service of EMS dispatch is provided, the delayed and missent mail is avoided, but also the convenience of quality examination and the level of administration is improved.

With the increase of processing efficiency and the improvement of service quality, the reduction in cost of one-off labels' material ,

device-depreciation and in labor cost is 320,000 RMB per year because more than 600 post branches can use circulative RFID tag instead of one-off bar code labels.

Experiences

We get to know more about the characteristics of RFID by the Shanghai pilot project.

● Information identifier
Information Identifier is the essential part of RFID application. The project of identifier is influenced by business characteristic, information system, operation process, condition of network, financial condition of the enterprise and so on. Meanwhile, the information system frame and the network frame, even the technology system of the enterprise in the future will be influenced by the identifier. Therefore standardization plays an important role in the project of identifier.

● Identification accuracy
Enterprises always pay more attention to the RFID identification accuracy in the primary phase of RFID application. In our opinion, on the one hand, the RFID technology and devices should be developed constantly to improve the identification accuracy, for example the standard ISO18000-6C should be approved as soon as possible; on the other hand, we can find out the right information collection steps of operation flow or improve process conditions, it means that you must optimize the process; or we can collect the information step by step and reduce the impact of identification error by data checkout.

● middleware
In Shanghai project, RFID system is based on the existing information system. It exchanges information with Postal Branch Operation System, Mail Center Operation System and Dispatching System of Mail Transportation, which are all based on bar-code, by the function of reading, writing, filtrating ,translating and so on. We have used some specific software, which are not middleware in deed. In my opinion, a commercial well-rounded middleware is absolutely necessarily for expansion and deepening of RFID application.

● Cost of tag
According to the result of experiment, the passive UHF tag is suitable for mail operation. Because the number of tags is very large in postal RFID system, the cost of tag decides the dimension of RFID application in some aspect. The circulation of tag is one of the solutions but the cost of administration increases. Several years ago, it was anticipated by some experts that the cost of tag used in postal operation will be reduced to less than 5 cents and we believe it will come true soon.

Conclusion

Certainly, RFID technology has a great prospect in postal industry. The Science and Technology Ministry of China constituted *white book of China RFID technology policy*, and the research & development of RFID has been ranked as an important item in the *11th 5-years plan of Chinese science and technology*. The postal application is an important component.

In the *11th 5-years plan*, China Post will pay more attention to extending the applications of RFID technology step by step. In 2006, some plans are considered to be primitively based on the experience of the Shanghai project:

● Application of RFID to EMS dispatches processing on the logistics system between Beijing, Shanghai and Guangzhou.

● Applications in the process of loose mails and vehicles management

● The general solution for application of RFID technology in China Post will be formulated, including technology parameter of system, performance and function target; excogitation corresponding operation flow and the method of data capture and balance checking; giving advice of regulation and procedure reform, and the advice of standardization; providing counsel of device configuration, estimate of investment, implementary plan .

In 2008, we will use RFID entirely in dispatch processing of *full-night –flight* mails, and do some experiments on the application of RFID in regular dispatch, logistics dispatch, mail box, container, assets management and so on.

The application of RFID in China Post is only on the starting point, and there is a lot of wok to be done. Recently, the RFID work group is constituted under the Advanced Electronic Service User Group of UPU Telematics Cooperative. The workgroup will research on related technology, operation and standard of postal application. China Post would like to cooperate with the other Postal administrations and related corporations. We are looking forward to the great future of RFID application.

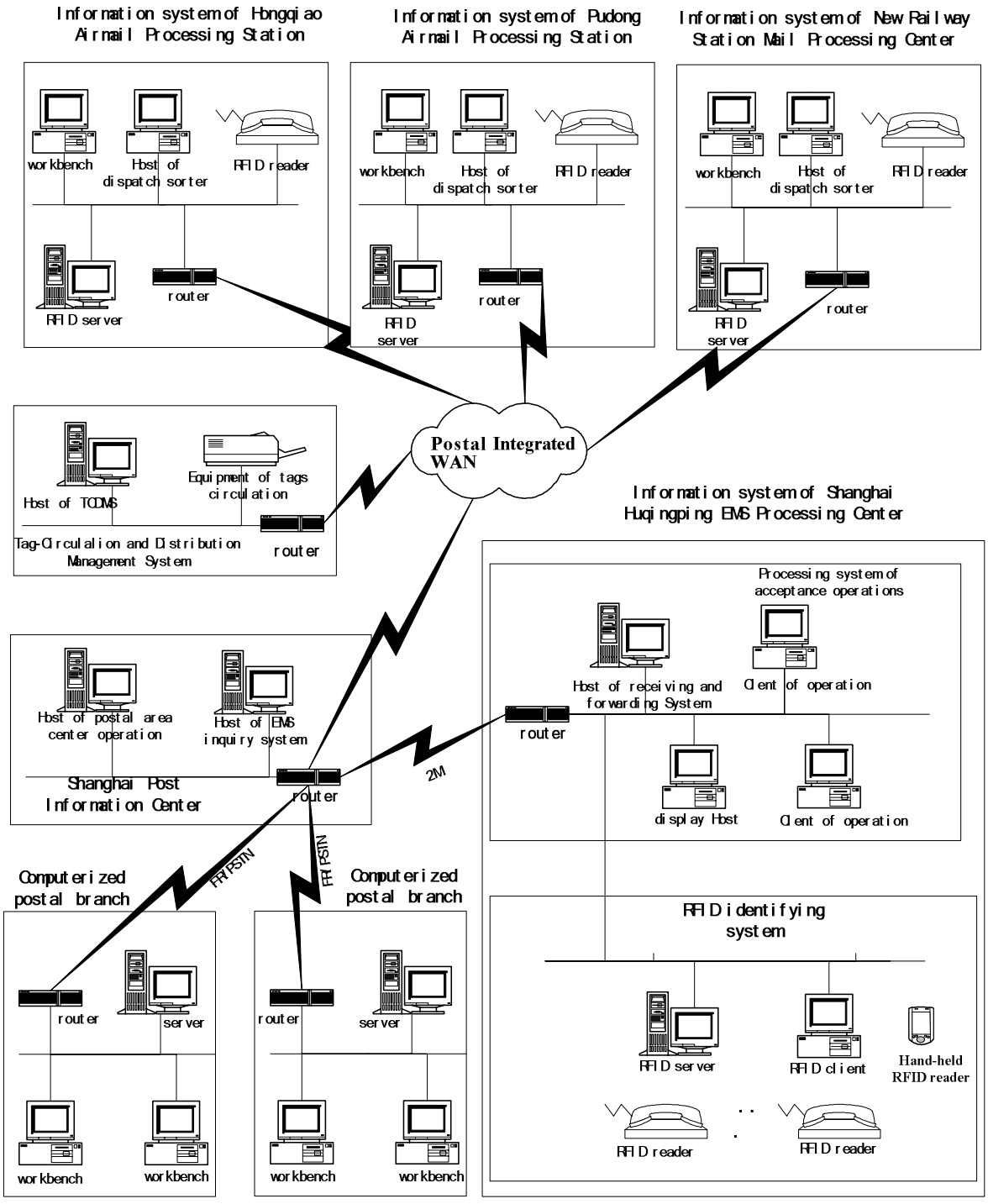

Fig. 1 The Network Framework of RFID Application System

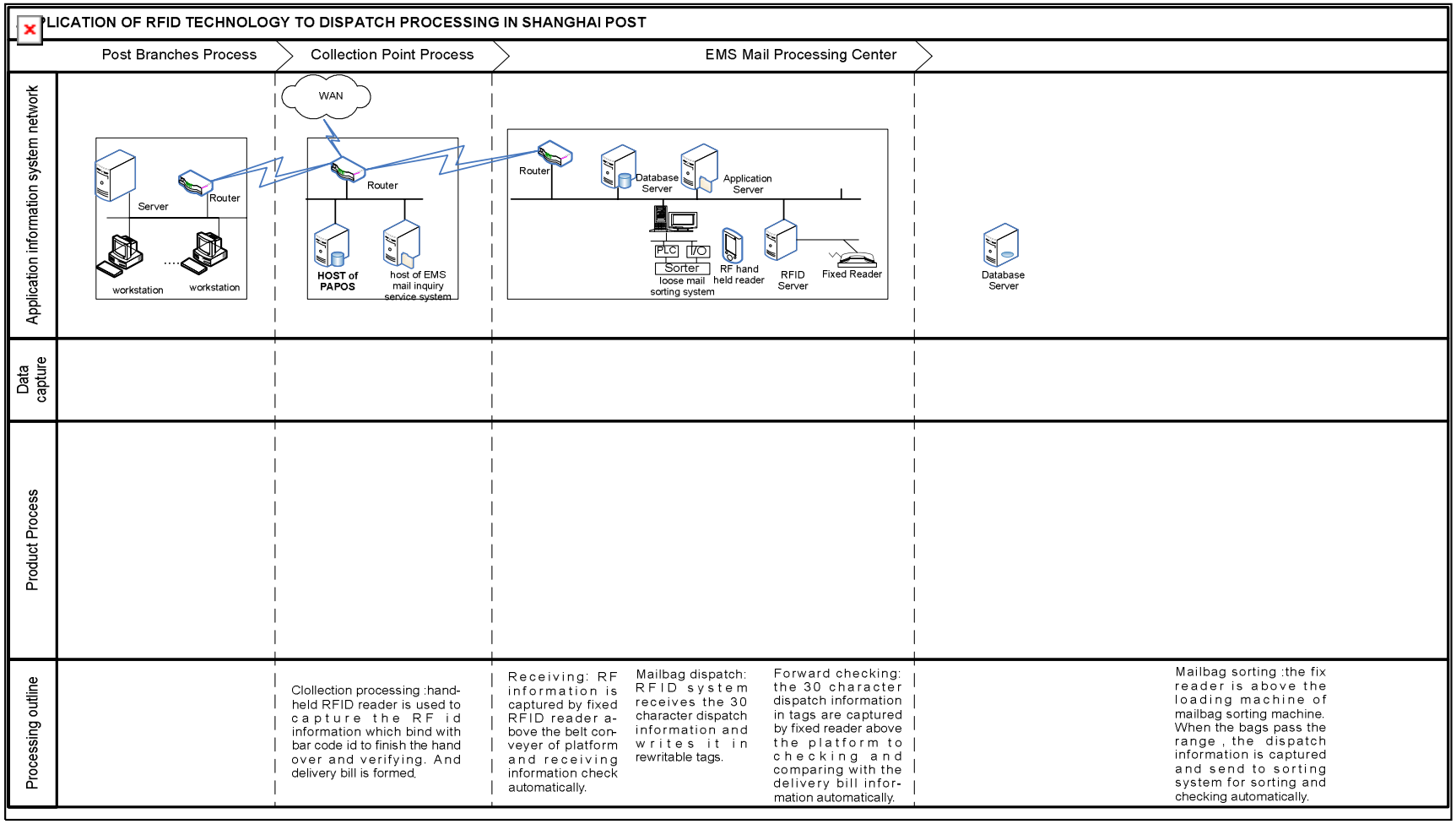

Fig. 2 The Processing Flow of Shanghai Project

Fig. 3 The View of Platform in Shanghai Huqingping EMS Processing Center