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UNECE Working Party on Intermodal Transport and Logistics

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Agenda item 3

NEW DEVELOPMENTS IN INTERMODAL TRANSPORT AND LOGISTICS

Activities of the International Organization for Standardization (ISO)

Update from ISO on its current work

Transmitted by ISO[1]

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SUMMARY

1. INTRODUCTION

As it concerns the transport area, it is important to mention the recent ISO work concerning:

- Terminology
- Identification of containers
- 45-foot container
- Container door end security
- Mechanical seals for containers
- Electronic seals for containers
- Supply chain application of RFID
- Security management for the supply chain
- Current list of management systems standards (MSSs)

2. TERMINOLOGY

The technical committee ISO/TC51 "Pallets for unit load method of materials handling" is revising its standard ISO 445:1996. The following draft international standard has been submitted to ISO member body for enquiry. The voting ended on 2006-01-04. In view of the comments received, a second ISO/DIS is to be prepared:

- ISO/DIS 445 Pallets for materials handling -- Vocabulary

The technical committee ISO/TC104 "Freight containers" is revising its standard ISO 830:1999. The following draft international standard will be submitted shortly for ISO member body enquiry:

- ISO/DIS 830 Freight containers --Vocabulary

The technical committee ISO/TC122 "Packaging" has prepared a new draft international standard ISO/DIS21067 "Packaging -- Vocabulary". The results of the ISO member body has been reviewed in October 2006 and it is now decided to submit it to a formal vote for its final publication. The reference will be:

- ISO/FDIS 21067 "Packaging -- Vocabulary"

3. IDENTIFICATION OF CONTAINERS

The identification of containers is currently made on the basis of the following ISO standards. The registration is made by the Bureau International des Conteneurs (BIC)

- ISO 6346:1995 "Freight containers -- Coding identification and marking"

Concerning the automatic identification, the ISO standard 10374: 1991 is now under revision. The following committee draft is under enquiry within ISO/TC104/SC4. It is expected to review it at next meeting of Sub-committee ISO/TC104/SC4 to be held in Busan (Republic of Korea) on 9 May 2007.

- ISO/CD 10374 "Freight containers -- RF automatic identification"

According to some recent statistics figures, the world container fleet at mid 2005 is as it follows (origin: Containerisation International, Census 2006)

20 ft ISO: 6 288 000 units
40 ft ISO: 6 650 000 units/13 402 000 TEU
45 ft ISO: 165 000 units/ 372 000 TEU
Non ISO: 531 000 units/ 892 000 TEU

Total World fleet: 13 790 000 units / 21 075 000 TEU

4. DIMENSIONS OF CONTAINERS: 45-foot CONTAINER

The technical committee ISO/TC104 “Freight containers” has actively developed amendments to the TC104 series of standards that will recognize and standardize the “45-foot” widely used inter-modal freight container size. The design being included in the standards is 45 feet long, 8 feet wide and 9 and a half feet high with end frames and corner fittings at both the extreme ends of the container and at the 40 foot points (2.5 feet in from each end). The container will be capable of stacking on top of 40-foot containers or 45-foot containers and of having either 40 or 45-foot containers stacked on top of it. Its other structural capabilities will be similar to those of all ISO freight containers.

Changes to the various standards have been made to incorporate this new container size in pertinent ISO standards.

The following amendments are now published:

- ISO 668:1995/Amd 1:2005 "Series 1 freight containers -- Classification, dimensions and rating -- Amendment 1"

- ISO 1496-1:1990/Amd 4:2006 "Series 1 freight containers --Specification and testing-- Part 1: General cargo containers for general purposes -- Amendment 4"

The draft Amendment 4 to ISO 3874 on "handling and securing" has been submitted to a member body enquiry. It has been approved and should now be published in coming months:

- ISO 3874:1997/Amd 4 “handling and securing”

5. CONTAINER DOOR END SECURITY

The technical committee ISO/TC104 “Freight containers” has examined the design of the door end of the container from the aspect of improving security and making undetected entry into the container more difficult. The current activity in this regard is focused on current industry provisions for sealing freight containers and the apparent ease in which knowledgeable individuals can defeat these provisions. The ISO/TC104 has therefore considered including sealing provisions into the standards and in particular, moving location of these provisions to a more secure location such as the locking rod cam and keeper.

The following international standard has been issued:

- ISO 1496-1.1990/DAmd 5: 2006 "Series 1 freight containers--Specification and testing-- Part 1 General cargo containers for general purposes --Amendment 5 Door end security”.

Moreover, some additional considerations relating to the door end security have been adopted and will be incorporated in ISO/TR 15070: 1996 on structural test criteria for freight containers. They will be issued shortly as a second Amendment:

- ISO/TR 15070:1996/Amendment 2 "Series 1 freight containers --Rationale for structural test criteria -- Amendment 2 Design consideration".

6. MECHANICAL SEALS FOR CONTAINERS

First step of the ISO/TC104 work was completed in 2004 and PAS (Publicly Available Specification) 17712 on mechanical seals for freight containers was published. This PAS set the standard for mechanical seals, including high security seals, for use in transportation.

Further work has been undertaken to publish a second edition of this ISO/PAS and to convert it to a full ISO standard. One important addition that has been made as part of this new edition and conversion process is a new annex that details quality control procedures for seal manufacturers to ensure seals produced meet the standard and that they are properly controlled during manufacture and distribution to prevent theft, copying or other fraudulent use of the seals or seal numbers.

The second edition of ISO/PAS 17712 has been published in July 2006.

An ISO/DIS 17712 (identical to the second edition of the ISO/PAS) is being submitted for ISO member body enquiry in December 2006. That last enquiry is aimed at transforming the ISO/PAS 17712 into a full ISO standard (ISO 17712).

7. ELECTRONIC SEALS FOR CONTAINERS

The technical committee ISO/TC104 has made significant progress in developing a series of standards that will jointly establish the standard for electronic seals for freight containers. Specifically the work has been divided into its component elements:

- ISO/FDIS 18185-1:"Freight containers – Electronic seals – Part 1:Radio-frequency communication protocol" (ISO/DIS approved. It is currently submitted as ISO/FDIS for formal vote);
- ISO/FDIS 18185-2: "Freight containers -- Electronic seals -- Part 2: Application requirements" (ISO/DIS approved. It is currently submitted as ISO/FDIS for formal vote);
- ISO 18185-3:2006 "Freight containers -- Electronic seals -- Part 3: Environmental characteristics" (published as ISO standard on 2006-05-22);
- ISO/FDIS18185-4: "Freight containers -- Electronic seals -- Part 4: Data protection"(ISO/DIS approved. It is currently submitted as ISO/FDIS for formal vote);
- ISO/AWI 18185-5: "Freight containers -- Electronic seals -- Part 5: Sensor interface"(Withdrawn, insofar as the user community has requested that this application be constrained to a read-only RF tag. A read-only RF tag would be unable to record sensor data);

- ISO/CD 18185-6: "Freight containers -- Electronic seals -- Part 6: Message sets for transfer between seal reader and host computer" (Withdrawn);
- ISO/FDIS 18185-7: "Freight containers -- Electronic seals -- Part 7: Physical layer" (ISO/DIS approved. It will be submitted as ISO/FDIS for formal vote in next few days. It will be renumbered as ISO/FDIS 18185-5).

This approach of addressing the specific aspects individually is facilitating agreement on the requirements amongst the experts involved. One important issue that has been agreed amongst the experts and included in their work is that all electronic seals will meet the requirements laid down in PAS 17712 for mechanical seals.

8. SUPPLY CHAIN APPLICATION OF RADIO FREQUENCY IDENTIFICATION (RFIDS)

Recognizing their overlying areas of responsibility, the technical committees ISO/TC 104 “Freight containers” and ISO/TC122"Packaging" have established a joint working group to look specifically at the application of radio frequency identification technology (RFID) to transportation issues. Specific work is underway in the Joint Working Group (JWG) to develop a series of related standards using RFID in the areas of:

- ISO/FDIS 17363 - Freight containers (being submitted as ISO/FDIS for the ISO member body formal vote);
- ISO/FDIS 17364 - Returnable transport Items (to be submitted as ISO/FDIS for the ISO member body formal vote);
- ISO/FDIS 17365 - Transport units (to be submitted as ISO/FDIS for the ISO member body formal vote);
- ISO/DIS 17366 - Product packaging (submitted as second ISO/DIS for an ISO member body enquiry terminating on 2007-02-08);
- ISO/DIS 17367 - Product tagging (submitted as second ISO/DIS for an ISO member body enquiry terminating on 2007-02-08).

Results of voting on the above drafts were reviewed on occasion of last meeting of ISO/TC 122, which took place in Atlanta on 27 October 2006. It has been resolves to undertake the final publication of the ISO standards 17363, 17364 and 17365. Accordingly, these three drafts will be submitted for a two-month formal FDIS vote in coming months. As it concerns the two other drafts, they are being technically improved and will soon be re-submitted to ISO member bodies as second ISO/DIS 17366 and ISO/DIS 17367.

9. SECURITY MANAGEMENT FOR THE SUPPLY CHAIN

At the end of 2001, the technical committee ISO/TC8 "Ships and marine technology" undertook the preparation of a management system for ensuring better security in the supply chain. At present the following international standards are available:

- ISO/PAS 28000:2005 “Specification for security management systems for the supply chain”;
- ISO/PAS 28001:2006 “ Security management systems for the supply chain—Best practices for implementing supply chain security—Assessments and plans";
- ISO/PAS 28003:2006 “Security management for the supply chain—Requirement for audit and certification of supply chain management security systems”;
- ISO/PAS 28004:2006 “security management for the supply chain—Guidelines for the implementation of ISO/PAS 28000”;
- ISO/ PAS 20858:2004 ”Ship and marine technology—Maritime port facility security assessments and security plan development”.

Draft international standards ISO/DIS 28000, 28001, 28003 and 28004 have been submitted to ISO member bodies for enquiry so as to enable a transformation of the relevant ISO/PASs into full ISO Standards.

In addition, the following work items are under preparation to become ISO 28005:

- Electronic port clearance (Further developing ISO/PAS 16917:2002 “Ships and marine technology—Data transfer standard for maritime, intermodal transportation and security”;
- Computer-to-computer data transmission.

The above standardization work is dealt with in close collaboration with the International Maritime organization (IMO), the International Labour Office (ILO) and the World Customs Organization (WCO).

10. MANAGEMENT SYSTEMS STANDARDS

The list of current management systems covers the following areas:

- Quality (ISO 9000 series) (work from ISO/TC176 "Quality management and quality assurance");
- Environment (ISO 14000 series) (work from ISO/TC207 "Environmental management");

- Information technology service (ISO/IEC 20000) (work from ISO-IEC/JTC1 "Information technology");
- Food safety (ISO 22000 series) (work from ISO/TC34 "Food products");
- Information security management (ISO 27000 series) (work from ISO-IEC/JTC1 "Information technology");
- Security for the supply chain (ISO 28000 series) (work from ISO/TC8 " Ships and marine structures".

Additional Management Systems Standards are envisaged for the future, e.g. on health and occupational safety, social responsibility (ISO/WD 26000), on dismantling of ships (ISO/WI 30000), etc. Other MSSs are envisaged in certain areas.

11. CONCLUSIONS

Members of the UNECE Working Party on Intermodal Transport and Logistics (WP.24) are invited to take note of the above update and if wish so to submit comments. It is moreover recommended that committee members will contact the ISO member body in their country for expressing views on drafts on interest to them.

Particular attention is drawn to the work related to the terminology, identification and dimensions of containers.

The attention of Working Party on Customs Questions affecting Transport (WP.30) has been drawn, at its January 2007 session, to current work on mechanical and electronic seals (second edition of ISO/PAS 17712, forthcoming MB enquiry on ISO/DIS 17712), to the progress made on electronic seals standards (ISO 18185), to the progress made on RFIDs application standards and on the issue of ISO 28000 series of standards which is now under way.

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