



HARMONIZED SYSTEM  
COMMITTEE

-  
25<sup>th</sup> Session  
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O. Eng.

Brussels, .

## CLASSIFICATION OF OPTICAL AND TAPE AUTOLOADERS AND LIBRARIES

(Item IX.12 on Agenda)

### Reference documents :

42.448 (HSC/22)  
42.508 (HSC/22)  
NC0160E2 Annex G/17, para. 7 (HSC/24 – Report)

### I. BACKGROUND

1. At its 24<sup>th</sup> Session in October 1999, the Harmonized System Committee examined Doc. 42.448 concerning "Possible Amendments to the Explanatory Note to Heading 84.71". Following its discussion, the Committee requested the Secretariat to prepare separate documents for the classification of 12 products, two of which were "tape and optical autoloaders and libraries" (see paragraph 7 (ii) of Annex G/17 to Doc. NC0160E2). The Secretariat requested and received information on these products through the assistance of the International Chamber of Commerce (ICC).

### II. DESCRIPTION OF PRODUCTS

2. Digital Linear Tape Automation

Digital Linear Tape (DLT) Autoloaders and Libraries : Autoloaders are comprised of a robotic mechanism, a control mechanism, a drive mechanism and 8 tape cartridge slots. Libraries are comprised of a robotic mechanism, a control mechanism, 1 to 6 drive mechanisms and 20 to 60 tape cartridge slots. They are used for data backup applications where unattended, automatic operation is required and high data throughput is needed.

The robotic mechanism consists of a robotic "hand", called a picker, capable of holding one piece of (DLT) medium and the translation mechanism to move this medium to/from any of 1 to 6 drives or any of the storage locations (cartridge slots). This mechanism is controlled by a microprocessor driven controller, which includes servo systems, robotic control systems, error recovery/diagnostic systems, and interface systems. The computer server to which this device is attached communicates and transfers data via an SCSI or a fiber channel interface. The robotic controller shares the SCSI bus with one drive while each of the other drives has its own SCSI bus, for bandwidth considerations.

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Computer system management of the library is accomplished via a separate LAN interface.

The drive mechanism utilised in the DLT Library uses a half-inch tape cartridge medium. The drive writes multiple channels in parallel with multiple serpentine passes down and back on the tape being required to write the entire tape. The capacity is 40 gigabytes per tape cartridge. The drives have hardware data compression available which will double the capacity, nominally. The data transfer rate is as high as 10 megabytes per second per drive.

3. Optical Automation

5.25" Magneto-Optical Jukeboxes, comprised of a robotic mechanism, a control mechanism, 1 to 10 drive mechanisms and 1 to 238 disk cartridge slots. They are used for business applications requiring fast data access by multiple users simultaneously.

The robotic mechanism consists of a robotic arm capable of holding one or two pieces of 5.25" media and the translation mechanism to move this media to/from any of 1 to 10 drives or any of 16 to 238 storage locations (cartridge slots), as well as to an import/export location called a mailslot. This mechanism is controlled by a microprocessor driven controller, which includes servo systems, robotic control systems, error recovery/diagnostic systems, and interface systems. The computer server to which this device is attached communicates to it via an SCSI interface, with the robotic controller responding as one SCSI ID on the bus.

The magneto-optical drive mechanism utilised in these jukeboxes uses a combination of an electromagnetic field and a red laser to change magnetic domains on a 5.25" disk to create data patterns. The data transfer rate is as high as 4.5 megabytes per second.

4. Three brochures and a Buyer's Guide (English only) obtained from one of the producers of the above products will be made available for consultation by delegates during the session.

III. SECRETARIAT'S COMMENTS

5. Having received no input from administrations, the following represents the Secretariat's view on the classification of tape and optical autoloaders and libraries.
6. On the basis of the preliminary information obtained, the Secretariat in Doc. 42.508 had commented that tape or optical autoloaders and libraries should fall in subheading 8471.70. However, that information made no reference to the robotic mechanisms which tape autoloaders and libraries and magneto-optical jukeboxes contained. It now appears that tape autoloaders and libraries and magneto-optical jukeboxes are comprised of a robotic mechanism, a control mechanism, one or more drive mechanisms and storage locations (magazines for cartridge slots) for disks or tapes.
7. Although the Subheading Explanatory Note to subheading 8471.90 (page 1409) states that this subheading also covers "optical disk filing systems", tape autoloaders and libraries and magneto-optical jukeboxes do not include keyboards, displays, scanners and printers and they do not perform several of the functions listed in that Subheading Explanatory Note. Further, whereas the "optical filing systems" could optionally be connected to an automatic

data processing machine, tape autoloaders and libraries and magneto-optical jukeboxes perform their functions in connection with a server. Therefore, in the Secretariat's view, they could not be regarded as "optical disk filing systems" within the meaning of the Subheading Explanatory Note to subheading 8471.90.

8. In respect of the function of tape autoloaders and libraries and magneto-optical jukeboxes, it should be taken into account that they are principally used for automatic data backup and retrieval purposes, thanks to the drive units which can write and read data from digital linear tapes and magneto-optical disks. One could consider the function of the robotic mechanism (picker) as secondary, since it simply changes cartridges between the drive(s) and the storage locations (cartridge slots). As such, tape autoloaders and libraries and magneto-optical jukeboxes could be regarded as similar to "**additional storage** external to the central processing unit (magnetic tape transports, magnetic card transports, magnetic disc and drum storages, magnetic core storages, etc.)" mentioned in item (2) of the last paragraph of part (D) of the Explanatory Note to heading 84.71 (page 1404). If so, then tape autoloaders and libraries and magneto-optical jukeboxes should fall in heading 84.71 (subheading 8471.70).
9. Yet, one could also consider that tape autoloaders and libraries and magneto-optical jukeboxes perform a particular service relative to the main function of the machines of heading 84.71 and increase the range of operations of such machines, as specified in the Explanatory Note to heading 84.73, first and second paragraphs (page 1412). If so, tape autoloaders and libraries and magneto-optical jukeboxes would appear to be accessories suitable for use solely or principally with the machines of heading 84.71 and, therefore, could be classifiable in heading 84.73 (subheading 8473. 30).

#### IV. CONCLUSION

10. Taking into account the Secretariat's above comments, the Committee is invited to rule on the classification of tape autoloaders and libraries and magneto-optical jukeboxes, the descriptions of which are given in the boxes in paragraphs 2 and 3 above.
  11. The Committee is also invited to indicate whether any further action should be taken to reflect its classification decision.
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