SUPREME COURT OF INDIA

Commissioner of Customs, Bangalore

Vs.

N.I. Systems India P.Ltd.

C.A.No.5394 of 2010

(S. H. Kapadia CJI. K.S. Radhakrishnan and Swatanter Kumar JJ.)

15.07.2010

JUDGEMENT

S. H. Kapadia, CJI.

1. Delay condoned.

Facts:

2. M/s. N.I. Systems (India) Private Limited (hereinafter referred to as "importer") is a 100% subsidiary of N.I. Corporation at Austin, Texas, USA.

3. Assessee imports various products from its Holding Company and supplies the same to its customers in India.

> "During the relevant assessment year, the assessee imported various products from their Principal. The products were computer based instrumentation products. The importer filed 64 bills of entries. The importer claimed the items to be computers and/ or parts of computers. The importer grouped the items in accordance with similar/ identical functions broadly under CTH 8471, 8473 and other headings falling under Chapter 84. Broadly, the importer categorized the imported items as follows:
>
> (i) PXI Controllers (ii) Input/Output Modules (also known as Modem or Control/Adaptor Units) (iii) Signal Converters.
>
> (iv) Chassis and its parts."

4. On verification of the technical data (including the catalogue and the webcast of the importer), the Original Authority ("O.A.") vide its decision dated 15.11.2006 held that the subject goods were not structurally designed to function as a computer.

"Further, according to the O.A., in the ordinary course of trade no buyer will purchase the subject goods as computers on account of price differential between the price of the subject goods and the price of the computer. According to the O.A., the subject goods stood manufactured for a special purpose and that purpose was either measurement or control. According to the O.A., the importer, in this case, had conceded before it that a complete system performs the function of measurement whereas if one looks at the subject goods item-wise, it shows that each item performs a sub-function of data acquisition processing. On the basis of the said concession, the O.A. concluded that each imported item constituted a part of a complete Measurement System. According to the O.A., if one applies the test of common parlance then the subject goods are measuring/controlling instruments and even in trade parlance they are not known as computers. Lastly, the subject goods are costlier than ordinary computer and the trader buys them because of their enhanced capabilities for the purposes of measuring/controlling instruments. According to the O.A., the subject goods are specially designed for industrial use which is indicated by the catalogue submitted by the importer. The embedded controllers may perform all functions of a CPU but, according to the O.A., the embedded controllers are not CPUs. According to the O.A., one more concession is made by the importer. In its reply to the show cause, the importer stated that they use real-time operating systems (software) and not the standard operating systems such as Microsoft Windows. Accordingly, the O.A. held that controllers are manufactured for a specific purpose and not as ADP Machines. The specific purpose being controlling/measurement as enumerated in the catalogue. In the circumstances, the O.A. has broadly classified embedded Controllers, Programmable Automation Controllers ("PACs"), Data Acquisition Boards, Digital Input Output Boards, PXI Chassis etc. under Chapter 90. The O.A. has rejected the classification sought by the importer under CTH 8471."

5. Aggrieved by the decision of the Additional Commissioner dated 15.11.2006, the importer preferred Appeal No. 98/07-CUS(B) before Commissioner of Customs (Appeals). Vide decision dated 31.7.2007, the Commissioner (A) dismissed the appeal preferred by the importer.

6. Against decision dated 31.7.2007, the importer preferred Customs Appeal No. 678/07 before CESTAT. Vide its decision dated 29.6.2009, the Tribunal held that the main item of import was PXI Controller and other Controllers. According to the Tribunal, these imported Controllers were nothing but ADP Machines. According to the Tribunal, the importer had placed before it the sample of imported items with enormous data including a diagram which read as follows:

"PXI Controllers = Computers = Data Processing Machines" [See page 10 of presentation of the importer company]"

7. According to the Tribunal, the diagram, on which reliance was placed by the importer, indicated that both PC and PXI Controller had a structure/ design which was common to

Automatic Data Processing Machines. According to the Tribunal, PXI controller in itself is not a measuring instrument; that the input of PXI Controller is only in the digital form as in the case of a PC; that PXI Controller is in turn connected with the processors, motherboard, hard drive with Windows XP, Serial Port, USB Port, Video Port, Ethernet Port, etc. According to the Tribunal, since the PXI Controller is identical in function to the normal home computer, both the items are comparable. According to the Tribunal, a PXI Controller acts as a Central Processing Unit for the entire PXI system. According to the Tribunal, a PXI Controller processes the data that enters from the external peripherals such as a mouse and a keyboard as well as from the internal peripherals such as PXI Signal Converting Modules (Cards). There is no difference between a PXI Controller and a PC. Thus, according to the Tribunal, a PXI Controller and other Controllers imported by the assessee are all ADP Machines. According to the Tribunal, all the imported Controllers carry out the functions of ADP Machines. According to the Tribunal, each and every imported Controller retains the characteristics of ADP Machine. According to the Tribunal, a PXI Controller can be used for a variety of applications ranging from advanced data acquisition to automatic manufacturing which clearly indicated that the imported items were not measuring instruments or their parts as claimed by the Department. According to the Tribunal, the imported items cannot be categorized as measuring instruments. According to the Tribunal, PXI Controller per se is not a measuring instrument. It can be used only in conjunction with an independent measuring instrument with suitable interface, hence, the PXI Controller/ other Controllers imported by the assessee cannot be classified under Chapter 90 of the Customs Tariff Act, 1975. Hence, this Civil Appeal is filed by the Department against the decision of the Tribunal dated 29.6.2009 in favour of the importer.

"Relevant Provisions of CTA:

8. Before proceeding further, we need to quote hereinbelow the relevant entries referred to in the Customs Tariff (2004-2005). At the outset, it may be mentioned that Chapter 84 finds place in Section XVI which deals with machinery and electrical equipments. The Section Note to Section XVI states that Section XVI does not cover articles falling in Chapter 90.

"Notes 3 and 4 to Section XVI read as under:

"3. Unless the context otherwise requires, composite machines consisting of two or more machines fitted together to form a whole and other machines designed for the purpose of performing two or more complementary or alternative functions are to be classified as if consisting only of that component or as being that machine which performs the principal function."

"4. Where a machine (including a combination of machines) consists of individual components (whether separate or interconnected by piping, by transmission devices, by electric cables or by other devices) intended to contribute together to a clearly defined function covered by one of the headings in Chapter 84 or Chapter 85, then the whole falls to be classified in the heading appropriate to that function."

9. Note 5(A) to Chapter 84 defines the expression "automatic data processing machines". Note 5(B) to Chapter 84 clarifies that an ADP may be in the form of systems consisting of variable number of separate units.

> “We quote hereinbelow, Notes 5(A) and 5(B) to Chapter 84, which read as follows:
>
> "5.(A) For the purposes of heading 8471, the expression "automatic data processing machines" means:
>
> (a) digital machines, capable of (1) storing the processing programme or programmes and at least the data immediately necessary for the execution of the programme; (2) being freely programmed in accordance with the requirements of the user; (3) performing arithmetical computations specified by the user; and (4) executing, without human intervention, a processing programme which requires them to modify their execution, by logical decision during the processing run;
>
> (b) analogue machines capable of simulating mathematical models and comprising at least: analogue elements, control elements and programming elements;
>
> (c) hybrid machines consisting of either a digital machine with analogue elements or an analogue machine with digital elements.
>
> 5(B) Automatic data processing machines may be in the form of systems consisting of a variable number of separate units.
>
> Subject to paragraph (E) below, a unit is to be regarded as being a part of a complete system if it meets all of the following conditions:
>
> (a) it is of a kind solely or principally used in an automatic data processing system;
>
> (b) it is connectable to the central processing unit either directly or through one or more other units;
>
> and (c) it is able to accept or deliver data in a form (codes or signals) which can be used by the system.”
>
> (emphasis supplied)

10. We quote hereinbelow Note 5(E) to Chapter 84, which reads as follows:

> “5(E) Machines performing a specific function other than data processing and incorporating or working in conjunction with an automatic data processing machine

are to be classified in the headings appropriate to their respective functions or, failing that, in residual headings."
(emph asis supplied)

11. Similarly, Note 7 to Chapter 84 is also relevant and it reads as follows:

"7. A machine which is used for more than one purpose is, for the purposes of classification, to be treated as if its principal purpose were its sole purpose.

Subject to Note 2 to this Chapter and Note 3 to Section XVI, a machine, the principal purpose of which is not described in any heading or for which no one purpose is the principal purpose is, unless the context otherwise requires, to be classified in heading 8479. Heading 8479 also covers machines for making rope or cable (for example, stranding, twisting or cabling machines) from metal wire, textile yarn or any other material or from a combination of such materials."

12. We also quote hereinbelow for the sake of clarity Chapter Heading 8471, which reads as follows:

"Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data on to data media in coded form and machines for processing such data, not elsewhere specified or included"

Chapter Sub-Heading 8471 50 00 reads as follows:

"Digital processing units other than those of sub-headings 8471 41 or 8471 49, whether or not containing in the same housing one or two of the following types of unit: storage units, input units, output units"

13. Chapter 90 falls in Section XVIII which refers to "measuring and checking instruments/apparatus as also parts and accessories thereof."

"Chapter Notes 1(h), 2 and 3 of Chapter 90 read as under:

"1 This Chapter does not cover:

(h) searchlights or spotlights of a kind used for cycles or motor vehicles (heading 8512); portable electric lamps of heading 8513;

cinematographic sound recording, reproducing or re-recording apparatus (heading 8519 or 8520); sound-heads (heading 8522); still image video cameras, other video camera recorders and digital cameras (heading 8525);

radar apparatus, radio navigational aid apparatus or radio remote control apparatus (heading 8526); numerical control apparatus of heading 8537;

sealed beam lamp units of heading 8539; optical fibre cables of heading 8544;"

"2. Subject to Note 1 above, parts and accessories for machines, apparatus, instruments or articles of this Chapter are to be classified according to the following rules:

(a) parts and accessories which are goods included in any of the headings of this Chapter or of Chapter 84, 85 or 91 (other than heading 8485, 8548 or 9033) are in all cases to be classified in their respective headings;

(b) other parts and accessories, if suitable for use solely or principally with a particular kind of machine, instrument or apparatus, or with a number of machines, instruments or apparatus of the same heading (including a machine, instrument or apparatus of heading 9010, 9013 or 9031) are to be classified with the machines, instruments or apparatus of that kind;

(c) all other parts and accessories are to be classified in heading 9033."

14. We quote hereinbelow CTH 9031 which refers to measuring or checking instruments, appliances and machines, not specified or included elsewhere in Chapter

"90. The Department seeks to place reliance on Chapter Sub-Heading 9031 80 00, which reads as under:

"Other instruments, appliances and machines"

15. The Department also places reliance on Chapter Sub- Heading 9031 90 00, which refers to "parts and accessories".

16. For some of the items, the Department places reliance on Chapter Sub-Headings 9032 89 10 and 9032 90 00 which read as follows:

"9032 89 10 Electronic automatic regulators 9032 90 00 Parts and accessories"

17. At this stage, we may deal hereinbelow the Explanatory Notes from HSN. Our customs tariff is basically based on HSN. Even the HSN makes it clear vide Section Note 1(m) that Section XVI which refers to Chapter 84 will not cover articles mentioned in Chapter 90.

"Similarly, Section Note 3 to Section XVI states that multi-function machines are to be classified according to the principal function of the machine. According to the Explanatory Notes, a printing machine with a subsidiary machine for holding the

paper or an industrial furnace combined with lifting or handling machinery is a composite machine in terms of Section Note 3. Further, referring to Functional Units, the Explanatory Note, referring to Section Note 4, inter alia states that when a machine including a combination of machines consists of separate components which are intended to contribute together to a clearly defined function covered by one of the headings in Chapter 84 then the whole shall fall for classification in the heading appropriate to that function, whether the various components remain separate or are inter-connected by devices used to transmit power, either by electrical cables or by other devices. At this stage, we quote hereinbelow Chapter Sub-Heading 8471 49 00, which reads as follows:

"Other, presented in the form of systems"

18. According to HSN, the word "systems" in Chapter Sub- Heading 8471.49 means ADP machines whose units satisfy the conditions of Note 5(B) to Chapter 84 and which comprises of a CPU, one input unit (for example, a keyboard or a scanner), and one output unit (for example, a visual display unit or a printer).

19. According to HSN, the following classification principles have to be applied in accordance with Note 5(E) to Chapter 84 in the case of machine incorporating or working in conjunction with ADPM and performing a specific function. These principles are as follows:

"(1) A machine incorporating an automatic data processing machine and performing a specific function other than data processing is classifiable in the heading corresponding to the function of that machine or, in the absence of a specific heading, in a residual heading, and not in heading 84.71.

(2) Machines presented with an automatic data processing machine and intended to work in conjunction therewith to perform a specific function other than data processing, are to be classified as follows:

The automatic data processing machine must be classified separately in heading 84.71 and the other machines in the heading corresponding to the function which they perform unless, by application of Note 4 to Section XVI or Note 3 to Chapter 90, the whole is classified in another heading of Chapter 84, Chapter 85 or of Chapter 90."

20. The most important aspect which needs to be emphasized in this case is that, according to HSN, data processing consists of handling information of all kinds, in pre-established logical sequences and for a specific purpose(s). According to HSN, ADP machines are machines which, by logically interrelated operations performed in accordance with pre-established instructions (program), furnish data which can be used as such or, in some cases, serve in turn as data for other data processing operations. The important thing to be noted is that there is a wide difference between handling information, referred to at page 1575 of HSN in the

context of CTH 8471 and automatically controlling the flow, level, pressure or other variables of liquids or gases, referred to at page 1856 of HSN in the context of CTH 90.32.

21. To complete the chronology of the paragraphs used in the Explanatory Notes, the HSN has stated in the context of CTH 84.71 that a CPU incorporates storage, arithmetical and logical elements and control elements, an input unit which receives input data and converts them into signals which can be processed by machines and an output unit which converts the signals provided by the machine into an intelligible form (printed text, displays, etc.) or into a coded data for further use (processing, controlling, etc.). [See page 1577 of HSN] In this connection, we quote hereinbelow the conditions laid down by the HSN for classifying a unit as a part of digital data processing system. These conditions are laid down at page 1577 of HSN, which read as follows:

> "A unit is to be regarded as being a part of a complete digital data processing system, if it satisfies the following conditions:
>
> (a) It is of a kind solely or principally used in an automatic data processing system;
>
> (b) It is connectable to the central processing unit either directly or through one or more other units;
>
> and (c) It is able to accept or deliver data in a form (codes or signals) which can be used by the system.
>
> The interconnections may be made by material means (e.g. cables) or by non-material means (e.g., radio or optical links).
>
> In accordance with Note 5(D) to this Chapter, printers, keyboards, X-Y co-ordinate input devices and disc storage units which satisfy the conditions of items (b) and (c) above, are in all cases to be classified as constituent units of data processing systems.
>
> The foregoing provision is, however, to be considered in the overall context of Note 5 to Chapter 84 and is therefore applicable subject to the provisions of paragraph (E) of that Note, by virtue of the introductory part of paragraph (B) thereof. Thus, ink-jet printers working in conjunction with an automatic data processing machine but having, particularly in terms of their size, technical capabilities and particular applications, the characteristics of a printing machine designed to perform a specific function in the printing or graphics industry (production of pre-press colour proofs, for example) are to be regarded as machines having a specific function classifiable in heading 84.43.
>
> Furthermore, appliances such as measuring or checking instruments adapted by the addition of devices (signal converters, for example), which enable them to be connected directly to a data processing machine, are, in particular, not to be regarded

as of a kind solely or principally used in automatic data processing systems. Such appliances fall to be classified in their own appropriate heading.

Digital data processing machines are put to many uses, for example, in industry, in trade, in scientific research and in public or private administrations."

22. Further, at page 1578 of HSN, it is stipulated that Chapter Heading 84.71 also covers constituent units of data processing systems. These may be in the form of units having a separate housing and designed to be connected, for example, by cables or in the form of units not having a separate housing and designed to be inserted into a machine. Display units of ADP machines provide a graphical presentation of the data processed. (See page 1579 of HSN).

23. Coming to Section XVIII, in which Chapter 90 falls, the Explanatory Notes in HSN amongst other things indicate that instruments and apparatus for automatically controlling the flow, level, pressure or other variables of liquids or gases, or for automatically controlling temperature fall in CTH 90.32. (See Note 7 to Chapter 90 at pages 1766 and 1856) Case of the Department:

24. Based on the technological write-ups given by the importer read with the description provided in the catalogue and the website it was argued on behalf of the Department that a complete system performs the work of measurement whereas the item imported by the assessee forms a sub-function of data acquisition and processing.

"According to the Department, the terms "control" and "control systems" generally refer to the control of a device, process or system by monitoring one or more of its characteristics. This is used to ensure that output, processing, quality and/or efficiency remain within the parameters over the duration of time. According to the Department, in several control systems, digital data processing monitors a device, process or system and automatically adjusts its operational parameters. In other control systems, such an apparatus only monitors the device, process or system and displays alarm leaving responsibility for adjustment to the operator. Thus, process control is typically employed in the manufacturing sector for process and discrete manufactures. According to the Department, field devices include temperature, flow and other sensors that measure characteristics of the device, process or system being controlled. On the other hand, control devices include valves, actuators which control the devise, process or system itself. According to the Department, controllers generate settings for the control devices based on measurements from the field devices. Controller operation is typically based on control algorithm that maintains a control system at a desired level by minimizing differences between the values measure by the sensors. According to the Department, controllers may be connected to other computing apparatus that facilitates monitoring or administration. According to the Department, the principal function of controllers is to execute control algorithms for the real time monitoring and to control devices, processes or systems.

They have neither the computing power nor user interfaces required to facilitate the design of a control algorithm.

Historically, the process control industry has used manual operations, such as manually reading level and pressure gauges, turning valve wheels, etc. in order to operate the measurement and control field devices within a process.

However, with the emergence of the microprocessor-based Distributed Control System ("DCS"), the distributed electronic process control came into existence in the process control industry. A DCS includes an analog or a digital computer, such as a Programmable Logic Controller ("PLC"), connected to numerous electronic monitoring and control devices like electronic sensors, transmitters, transducers etc. located throughout a process. The DCS computer stores and implements a centralized and complex control scheme in order to effect measurement and control of devices within the process so as to control process parameters according to the overall control scheme.

According to the Department, PACs are not meant to be used as personal computers. The purpose of controllers is to control industrial processes. Thus, according to the Department, a controller by its very name performs functions distinct from data processing. Moreover, according to the Department, there are differences in the structure and the function of a controller and the function of a PAC vis-a-vis the PC. According to the Department, PAC cannot be equated to a PC as is sought to be done by the Tribunal. A PAC combines a PLC and a PC.

The Department also placed reliance on the webcast to show that a processor is separated from FPGA by a high-speed bus. According to the Department, the webcast further shows that a processor is separate and distinct from the main controller wherein the hardware is dedicated to perform measurement and control applications. According to the Department, the software used in order to programme the processor is designed using a proprietary software known as Lab View. The catalogue is relied upon by the Department to show that the controller, in the present case, has been designed and made for a specific function and regulating and controlling industrial processes.

According to the Department, none of the above aspects have been duly considered by the Tribunal. The entire case of the Department before us was that the Programmable Process Controllers when imported were suitable for use principally with industrial process control equipment, i.e., sensors which measure temperature, pressure, flow etc. and therefore such programmable process controllers were classifiable as a part of the said equipment, instrument or apparatus. The programmable process controller, though separate from sensors, is necessarily an individual component intended to contribute to a clearly defined function. According

to the Department, the programmable process controllers being parts and accessories of a regulating or controlling apparatus have been classified rightly by the adjudicating authorities under CTH 9032 89 10. According to the Department, PACs whether embedded or otherwise are in essence Programmable Process Controllers. In support thereof, the Department has placed reliance on two circulars issued by Central Board dated 2.9.1996 and 9.5.1997."

25. As regards Input-Output ("I.O.") Modules and Chassis, the Department contended that I.O. modules and chassis have been rightly classified by the adjudicating authorities as parts and accessories of regulating and controlling apparatus classifiable under CTH 9031 90 00/9032 90 00. In this connection, the Department submitted on the basis of the catalogue and technical write-ups that each and every imported I.O. Modules is configured primarily to match with a sensor. In this connection, the Department has demonstrated by way of an illustration that one of the items imported by the assessee is Instrument Control Boards (Cards). Instrument Control Board (Card) is a stand-alone instrument. It acquires data from external sensors, but it is unable to send the data directly to a computer. Therefore, a suitable board like instrument control board is required to be placed inside the computer to allow the data to be sent directly to the computer. Similarly, another example given by the Department is concerning Data Acquisition Board. The purpose of a Data Acquisition Board is to acquire data from external sensor and convert it to digital sensors which the PC can understand. Thus I.O. Module is tailored to a specific function and is therefore a part of regulating a controlling apparatus. According to the Department, a signal converting device or I.O. unit has got to be properly aligned with the measuring or checking instrument. According to the Department, industrial process controllers and I.O. modules are parts of a functional unit, the function of which is to be judged as a whole and is therefore classifiable in Chapter

"90. According to the Department, for the abovestated reasons Controllers imported by the assessee including embedded controllers are not merely PCs. They have a specialized structure. They have a specialized function to perform. Moreover, I.O. modules and chassis, which are the subject matter of import are also specialized to operate with specific sensors and devices. The data available from sensors is transmitted to the controller for the execution of control functions. Therefore, the package as a whole - both hardware and software - must be seen as one functional unit. Hence, the imported goods, according to the Department, have been rightly classified by the adjudicating authorities under Chapter 90. According to the Department, I.O. modules and chassis have been rightly classified by the adjudicating authorities as parts and accessories of Automatic Regulating or Controlling Instruments and apparatus under CTH 9032 90 00."

Case of the Importer:

26. Briefly, the case of the importer before us was that imported items cannot perform any specific function unless the end-users have an appropriate programming software.

"According to the importer, the input for the above items is digital signals captured by sensors. According to the importer, just because the imported items were to be used with measuring instruments, it cannot be said that such items are to be classified under Chapter 90. According to the importer, PXI controller, I.O. modules and signal converters are all varieties of ADP Machines. They all run on operating systems like linux, windows etc. According to the importer, no ADP Machine can capture an electrical signal such as temperature, voltage, pressure etc. on its own as a stand-alone item. According to the importer, an ADP Machine requires various types of interface boards/units which are required to be installed in it and connected to sensors so that temperature, voltage and pressure can be received by the interface boards/units and converted into digital signals and then sent to ADPM processing. Therefore, according to the importer, it is the sensor which measures the real world phenomena as ADPM cannot interface by itself directly with the sensors.

Thus, assessee imports a variety of such interface boards/units which are then installed into ADPM. According to the importer, these boards/units meet the criteria mentioned in Chapter Note 5(B) as well as Explanatory Notes (I)(D)(4) & (5) which inter alia state that such boards/units when imported should be classified under CTH 8471 as units of ADPM. According to the importer, an ADPM when imported has only an operating software which cannot perform any specific function without application of software. For example, a PXI Controller is incapable of processing the digital data fed to its CPU unless a specific software is written for such processing. At the time of import no software is written or provided. It is the end-user who uses a programming language or an appropriate tool such as Lab View software to write a specific software for its own stand-alone instrument or application like thermostat, spectrum analyzer, oscilloscopes etc.. According to the importer, at the time of import, the assessee is not aware of what application the end-user may put the PXI controller to use. Moreover, a PXI controller is not dedicated to a single type of machine or operator. It is capable of being connected to multiple apparatuses simultaneously which apparatuses can be changed continuously. As such, the PXI controller is freely programmable as per the requirements of the user.

This end-user developed software or programme is stored in the memory and is executed by PXI controller. It is according to the software and the data fed to the CPU that the PXI controller processes the data and provides the required processed output. According to the importer, as the PXI controller satisfies the requirement of free programmability, storing and processing of programmes, performance and arithmetical computation and execution of programmes, the PXI controller qualifies as ADP Machine in terms of Chapter Note 5(A) to Chapter 84 of Customs Tariff."

27. According to the importer, the above position has not been disputed by the Department. That, the Department has not disputed that the Controllers imported by the assessee satisfy all the requirements of Chapter Note 5(A). According to the importer, the only reason why the Department was to classify the imported items under Chapter 90 is because according to

the Department, in addition to Chapter Note 5(A), Chapter Note 5(E) also applies. The same test is applied by the Department to I.O. Modules. According to the importer, even the Department accepts that these modules satisfy the definition of ADP given in Chapter Note 5(B). However, the Department has classified the said modules under Chapter 9031 by virtue of Chapter Note 5(E). The same test is also applied by the Department in the context of signal convertors. According to the importer, even the signal convertors satisfy the definition of units of ADP as provided in Chapter Note 5(B). However, the Department has classified the said items under Chapter 9031 only by virtue of Chapter Note 5(E) of Chapter 84. In short, the Department has classified the Controllers under heading 9031 or 9032 as measuring, checking or controlling instruments. They have classified signal converter units and I.O. modules under heading 9031 as parts of measuring and checking instruments which is objected to by the importer. The basis for the Department case has always been that the imported goods, though ADPM, are meant for use with checking or controlling instruments are therefore classifiable under heading 9031 and 9032.

Findings:

28. For the reasons given hereinafter, we hold on the basis of technical material (including the importer's own catalogue and webcast) that Controllers (including embedded controllers) are not merely PCs/ADPMs, but have a specialized structure and specific functions to perform and are therefore classifiable under Chapter 90.

29. Similarly, I.O. Modules and Chassis, which are the subject matter of import in this civil appeal are meant to operate as parts of Industrial Process Control equipments like sensors. These I.O. Modules come with software tailored to their specific pre-defined functions.

> "Therefore, one has to see the package in the holistic manner. The package as a whole - both hardware and software - constitutes one single functional unit.
>
> Accordingly, we hold that I.O. Modules and Chassis are classifiable as parts and accessories of Automatic Regulating or Controlling Instruments/Apparatus under CTH 9032.90.00."
>
> Reasons:
>
> (A) Based on Technical Material:

30. Whether a PXI Controller = PC Controller = ADPM? This is the basic issue which we need to answer in this civil appeal.

31. On examination of the technical write-up, before going into the analysis of the classification principles, we are of the view that the purpose of Controllers whether embedded or not, is to control industrial processes.

"Programmable Automation Controller is the combination of PLC and PC technology and this means the ruggedness of PLCs, software stability of a PC and the independence to incorporate modular and diverse I/O. PAC is an improvement over PLC. PAC is capable of being controlled by a PC/Laptop but it is not a PC/Laptop. The principal function of Controllers is executing Control Algorithms for the Real-time monitoring and control of devices, processes or systems whereas the principal function of a PC by itself is acquisition, analysis and display of data.

A controller performs functions in addition to data processing. The webcast presentation also shows the difference in the structure and functions of a Controller vis-`-vis a PC (simpliciter). The hardware in the Controller is dedicated to perform Measurement and Control Applications. Basically, PACs are Programmable Process Controllers which are suitable for use principally in conjunction with Industrial Process Control equipment like sensors which measures temperature, pressure etc. The programmable process controller, though distinct from sensors, is an individual component intended to perform a specific function. The programmable process controller is a part and accessory of a controlling apparatus."

32. A word about PXI, PAC, Sensor and FPGA.

"(i) PXI: PXI is designed for measurement and automation applications which require high performance and a rugged industrial form. In the Chassis of PXI, there are about 8 slots. PXI is a system. It consists of three components, namely, chassis, system controller and peripheral modules. One can select the modules to be installed in the PXI System. PXI uses PCI-based technology. There are PXI Modules, including those which are imported herein, available for almost every conceivable measurement and automation application.

(ii) PAC: PAC stands for Programmable Automation Controller. PAC is a Controller. PAC is an improvement on PLC. Various characteristics of PAC includes multi-domain functionality - ability of handling logic, motion and process control - all on a single control platform.

Every computational algorithm cannot be solved with a PC.

PAC is meant for a wide variety of applications. PAC incorporates multiple disciplines such as logic control, process control and motion control all on a single open platform with a single data base.

A classic example of the uses of a PAC would be in a large bakery with multiple ovens. The ovens must stay within a specific temperature range in order to properly bake the products; this can be accomplished by someone physically inspecting thermometers on each oven, then manually adjusting the burners on each as needed. A PAC could automate these tasks by monitoring temperature remotely, then sending

instructions to the burners to either increase or decrease the heat until the temperature returns to the acceptable range. A person in an office overlooking the ovens can view all of the temperature data in real-time from their Personal Computer, which can be connected to the PAC's by serial cable, Ethernet or a wireless modem.

(iii) Sensor: In the field of measurement and instrumentation, the parameter to be measured (motion, pressure, temperature, etc.) is first detected with the help of a sensor. The sensor converts the detected information into a suitable form (measurable currents and voltages) for acceptance in the later stages for decision- making. There are many types of sensors. Example: Photo electric sensor, motion detector, pressure sensors etc..

(iv) FPGA: FPGA stands for a Field-programmable Gate Array. FPGAs are integrated circuits which are used in electronic equipments. It is a special kind of chip on which there is embedded software. FPGA receives signals (information) from devices like sensors or any other input device. Such information is processed by FPGA. After processing, the processed data/command is sent to the required destination like a computer, actuator, thermostat, motor etc. to perform a specific function like Controlling. For example, on receiving the command the motor can start or stop. Similarly, on receipt of the command the thermostat can regulate the temperature."

33. At this stage, it is required to examine each of the imported items, including I.O. Modules, to see whether the hardware coupled with pre-installed software gives a definite identity and function. For example, the purpose of Data Acquisition Boards ("DAQ") is to acquire data from external sensors, usually in the form of Analog Voltage of +/- 10 volts, which is then converted into digital signals, which the personal computer can understand.

"Similarly, Analog Output Boards are meant for converting signals from external units such as PXI controller.

Similarly, Network Interface Module ("NIM") is used to connect measuring instruments to a PC by sending and receiving messages, two ways. The Chassis of PXI provides connectivity and housing for embedded controllers and data acquisition modules, allowing them to communicate with each other. To sum up, the I.O. Module is tailored to a specific function. Each of the abovementioned Boards (cards) is inserted into the slots of PXI. Each of the I.O. Modules is tailored to a specific function and is, therefore, a part of a regulating and controlling apparatus like a sensor, thermostat etc. Therefore, one has to look at the machine (PXI Machine) holistically."

(B) Application of above technical material to the relevant Tariff Entries:

34. At the outset, it needs to be stated that PACs, whether embedded or otherwise, are in essence Programmable Process Controllers.

35. In the matter of classification, we need to discuss "PACs" and "Input/Output (I.O.) Modules and Chassis" in two separate parts.

36. Chapter 84 is located in Section XVI. Note 1(m) shows that if an article falls in Chapter 90, regardless of whether or not it may otherwise fall within Chapter 84, that Chapter (No. 84) stands excluded. There are eight Chapter Notes to Chapter 84. The key Chapter Notes for deciding the present Civil Appeal are Notes 5(E), and 7, which are quoted hereinabove. Chapter Note 5(E) inter alia refers to machines performing specific functions other than data processing and incorporating in it a data processing machine or it may be working in conjunction with ADPM in which event the said machines performing specific functions are to be classified in the heading appropriate to their respective functions. Under Note 7, a machine which is used for more than one purpose is, for the purpose of classification, to be treated as if its principal purpose is its sole purpose.

37. Chapter 90 includes measuring and checking instruments and apparatus; parts and accessories thereof.

> "In view of Section Note 1(m) of Chapter 84, quoted above, it is first to be seen whether or not PACs fall within Chapter 90. Keeping in mind the scheme of Chapter 84 and Chapter 90, we are of the view that, in the present case, the correct approach would be to examine the scope of Chapter 90 first and foremost and only then we need to examine the scope of Chapter 84. At this stage, we need to state that Chapter Note 1(h) of Chapter 90 does not exclude CTH 8471. Hence, even if an item falls under CTH 8471, it could still come under Chapter 90, however, in view of Section Note 1(m) Chapter 84 would stand excluded.
>
> This is because the application of Chapter 84 is subject to the applicability of Chapter 90."

38. At this stage, we may refer to Chapter Note 2 to Chapter 90 which is in two parts. Note 2(a) inter alia states that what is otherwise parts or accessories, but is classifiable as goods under Chapter 84, shall be classified in their respective headings. The effect of Note 2(a) is that if it can be shown that Programmable Process Controllers/PACs are classifiable as "goods" under Chapter 84 then such a classification would include the same for being considered as parts or accessories of goods under Chapter 90. However, in this case, Note 2(a) is not attracted as PACs are not classifiable as "goods" under Chapter 84. It has been argued on behalf of the importer itself that PACs/Programmable Process Controllers by themselves are not measuring, regulating or control instruments and hence CTH 9032 classification relied upon by the Department was unsustainable. It was further argued on behalf of the importer that physical variables such as temperature and voltage are measured by sensors which could be classified under Chapter 90, but this does not extend to PACs/Programmable Process Controllers. It had been further argued on behalf of the importer that automatic control apparatus referred to in Chapter 90 must consist of a device

for measuring a control device and a starting-stopping/operating device, all of which should form a "single entity" and since a PAC does not fulfil the said test, CTH 9032 is not attracted in the case of PAC/Programmable Process Controllers.

39. In our view, the above argument of the importer is unsustainable for the following reasons. Firstly, it is nobody's case that a PAC/Programmable Process Controller by itself is an automatic regulating, controlling instrument or apparatus in terms of Chapter 90. On the contrary, in view of Chapter Note 2(b) to Chapter 90 read with Note 3 of the same Chapter, PACs/Programmable Process Controllers are parts and accessories of a system/instrument which are suitable for use solely or mainly with a number of machines, instruments, apparatus of the same Heading, i.e., 9032 like sensors, thermostats etc. In our view, PACs/Programmable Process Controllers imported by the assessee herein are suitable for use principally with Industrial Process Control Equipment like sensors, thermostats etc. which measures temperature, process etc. Therefore, they are correctly classifiable as a part of the said machine, instrument or apparatus.

> “Secondly, a "control system" generally refers to the control of a device, process or system by monitoring one or more of its characteristics. It ensures that output processing remains within the desired parameters over a period of time. Controllers are generally connected to other computing apparatus. The principle function of controllers is to execute control algorithm for real time monitoring and for controlling devices, processes or systems. In this connection, it may be noted that, a PAC/Programmable Process Controller ("PPC") is not by itself an automatic regulating, controlling instrument or apparatus. A PAC/PPC when imported is suitable for use mainly with an industrial process control equipment like sensors, which measures temperature, pressure etc. As such, a PAC/PPC is a part of an industrial process control equipment/system and accordingly such controllers are classifiable as a part of instrument or apparatus (see Chapter Note 2(b) read with Note 3 of Chapter 90).
>
> Thirdly, in this case, we are concerned with not only classification of PXI Controller and other controllers, we are also concerned with classification of Input-Output Modules and Chassis. The key aspect, therefore, concerns the nature and function of I.O. Modules and Chassis along with controllers. One has therefore to take into account all the imported items as constituting a complete System which performs the work of measurement. PXI is a system.
>
> It is composed of three basic components - chassis, system controller and peripheral modules. These modules are also imported by the importer in this case. One such module is Network Interface Module. This module is used to connect to a network for distributed control applications. It interconnects a PC to a measuring instrument by sending and receiving messages from the two units. It is important to note that in the chassis of the PXI there are slots in which Analog Output Boards (Cards); Digital Input-Output Boards, Image Acquisition Boards, Distributed Input-Output Boards,

NIM etc. are inserted. Each I.O. Module imported by the assessee is tailored to a specific function and therefore such I.O. Module is a part of a regulating or controlling apparatus. Take the case of NIM. It is a hardware device. It may be in the form of a network interface card or a network adapter or in the form of Network Interface Controller ("NIC"). NIM is a computer hardware component designed to allow computers to communicate over a computer network. It provides connectivity between the industrial network and the I.O. Module. A network interface module works as a connector and adapter unit in order to provide a two way interconnection between external sensor unit and the ADP.

Thus, I.O. Module is a hardware. It is also known as I.O. device or I.O. Point. It may be in the form of I.O. Cards or I.O. Boards. When I.O. Module is used to accept data (input) from sensors, transducers, Programmable Logic Controllers ("PLC"), computers etc. and then distributes the data (output) to other devices in the system, then I.O. Module is called as Distributed I.O. Module. Such system is also called as Distributed Control System ("DCS"), which is a control system used normally in a manufacturing plant or in any other kind of dynamic system. DCS, therefore, is used in a variety of industries to monitor and control distributed equipments. An I.O. Module is important from another angle also. It converts readings from sensors and provides output signals which are used for operating actuators (which make a device move or start working) via Network Interface Module. A Modular Distributed I.O. System which is also known as a Field Point provides for industrial monitoring and control applications. Thus, the Field Point System includes Analog and Digital I.O. Modules, terminal bases and network modules which connect I.O. Modules to industrial networks and software tools. Field Point Systems are ideal for use in industrial environment. Fourthly, Programmable Logic Controller ("PLC") is a control device. It is normally used in industrial control applications. It is a Programmable Microprocessor based device which is used to control assembly lines and machinery on the shop floor as well as to control many other types of mechanical, electrical and electronic equipment in a plant. A PLC is designed for real-time use in rugged industrial environments, connected to sensors and actuators. PLCs are characterized by the number of I.O. Ports which they provide. PLCs are also categorized by their I.O. scan rates. As stated, PACs, which expands the role of PLCs and, at the same time, combines the capabilities of several traditional controls and monitoring systems, offers several benefits in the form of enhanced functionalities. Thus, a PAC does not replace the traditional PLCs but it expands the role of a PLC. A PAC has features found in Programmable Logic Controllers, Distributed Control Systems, Remote Terminal Units and PCs."

40. The summary of what we have stated above is that PACs/Programmable Process Controllers and I.O. Modules by themselves are not measuring, regulating or controlling instrument (system). Physical variables such as temperature and voltage are measured by device, like sensors which constitute measuring and control systems. In other words,

controllers and I.O. Modules each have a specific function to perform being parts of a measuring and control system i.e. sensors.

41. We also do not find any merit in the submission of the importer that in view of the Explanatory Notes, the Measuring Device, the Control Device and the Operating Device has to form a "single entity". There is no dispute that if all the above three devices are found in one "single entity" then classification will fall under Chapter 90. However, the test of "single entity" containing three devices is not a pre-condition for classification under CTH 9032. On the contrary, the test is not that of single entity, but of the device being capable of working as a functional unit. In this connection, Note 3 of Chapter 90 is to be read. Note 3 incorporates Note 4 to Section XVI. Note 4 inter alia provides for a machine consisting of individual components which may be separate as long as they are intended to contribute to a clear defined function. The PACs/Programmable Process Controller, though separate from sensors, is an individual component intended to contribute to a clearly defined function. Note 3 of Chapter 90 has to be read with Note 2(b) of Chapter 90 and if so read then it becomes clear that PAC/Programmable Process Controllers, being parts and accessories and a regulating or controlling apparatus like sensors have got to be classified under CTH 9032.89.10.

42. For the above reasons, we hold that PACs (including embedded Controllers/Programmable Process Controllers) have been rightly classified by the Department under CTH 9032.

43. On the question of Input-Output (I.O.) Modules and Chassis, the Tribunal has not given any finding whatsoever thereon. However, on going through the technical material and the demonstration given to us in Court, we are of the view that I.O. Modules and Chassis have also been rightly classified by the Department as parts and accessories of regulating and controlling apparatus classifiable under Chapter 90. In this connection, one needs to examine the nature and function of I.O. Modules and Chassis which we have already discussed hereinabove. To put it briefly, at the cost of repetition we may say that the primary function of I.O. Modules (Boards) is to function as a part of measuring and control System. It is for this reason that such Modules are required to be classified as parts and accessories of regulating and measuring System. For this purpose, it is necessary to examine each of the imported items apart from Controllers in order to see whether the hardware coupled with the pre-installed software gives it a definite identity and function. From the catalogue and technological write-ups we find that each and every I.O. Module imported by the assessee is configured with a sensor at one end. This aspect is very important. Take the example of Data Acquisition Boards (DAQ). The purpose of DAQ Boards is to acquire data from external sensor, usually in the form of analog voltage of +/- 10 volts. This data is converted by DAQ Boards into digital signals which the personal computer can understand. On the other hand, Instrument Control Boards which are placed inside the computer allow data required from external sensors to be communicated directly to the computer. This is called as handling of information (see Explanatory Notes of HSN at page 1575) which is different from controlling temperature, pressure etc. (see Explanatory Notes of HSN at page 1856). On the

other hand, we have what is called as Analog Output Boards which are meant for converting signals from external units such as PXI. Similarly, the Chassis provides connectivity and housing for embedded controller and the data acquisition modules, allowing them to communicate with each other. A network interface module is used to connect to a network for distributed control applications. It interconnects measuring instruments to a PC by sending and receiving messages from the two units. Thus, each I.O. Module is tailored to a specific function and is therefore a part of regulating and controlling apparatus. Handling of information under the HSN Notes is separate and distinct from regulating and measuring temperature, pressure etc.

44. Lastly, we need to analyse Chapter Note 5(E) to Chapter 84. In our view, once a machine incorporating an ADPM performs a specific function other than data processing then that machine is classifiable in the heading corresponding to the function of that machine (see Note 4 of Section XVI and Note 3 to Chapter 90, the scope whereof has already been explained hereinabove). Further, HSN clearly indicates that Heading 8478 is excluded where the case is of a clearly defined function to which separate components contribute.

45. In our view, in order to attract Note 5(E) the real test is whether or not the machine imported is performing a specific function relatable to the functional unit as a whole. The said machine should be seen as a System. As a functional unit, the imported machine should perform a function other than data processing or it should perform a function in addition to data processing. In our view, Industrial Process Controllers and I.O. Modules, which are part of a functional unit, the function of which is to be judged as a whole are therefore classifiable in Chapter 90. The sentence in Chapter Note 5(E) "incorporating or working in conjunction with an ADPM" merely indicates that the overall package, which is presented before the Department, had an ADP Machine in it. In other words, what is imported is a System containing an ADPM. Our above interpretation stands to reason because if the contention of the importer herein is accepted, it would mean that every machine that contains an element of ADP would be classifiable as an ADP Machine under Chapter 84. This would completely obliterate the specific function test and the concept of functional unit.

46. For the aforestated reasons, we are of the view that the imported goods were rightly classified by the Department under Chapter 90. We are also of the view that the Department was right in classifying the I.O. Modules and Chassis as parts and accessories of Automatic Regulating or Controlling Instruments and Apparatus in terms of CTH 9032.90.00.

47. For the aforestated reasons, the impugned order of CESTAT is hereby set aside and the Civil Appeal filed by the Department stands allowed with no order as to costs.