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**Datasheet for the decision
of 7 September 2006**

Case Number: T 0576/04 - 3.5.03

Application Number: 00113429.5

Publication Number: 1128244

IPC: G05B 19/418

Language of the proceedings: EN

Title of invention:

Network connection system for machine tools, particularly injection presses for plastics

Applicant:

NEGRI BOSSI S.P.A.

Opponent:

-

Headword:

Networked injection presses/NEGRI BOSSI

Relevant legal provisions:

EPC Art. 52(1), 56

Keyword:

"Inventive step - no"

Decisions cited:

-

Catchword:

-



Case Number: T 0576/04 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 7 September 2006

Appellant: NEGRI BOSSI S.P.A.
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 4 November 2003
refusing European application No. 00113429.5
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: D. H. Rees
R. Moufang

Summary of Facts and Submissions

I. This is an appeal against the decision of the examining division to refuse the European patent application number 00 113 429.5, with publication number 1 128 244. The reason for refusing the application, given in a written decision issued on 4 November 2003, was that the subject-matter of independent claim 1 did not involve an inventive step with respect to the disclosure of documents

D1: EP 0 916 466 A and

D2: J. Geier, "Wireless LANs: Implementing Interoperable Networks," Macmillan Technical Publishing, USA, 1999, pages 8 to 20, 43 to 58, 90 to 96, 194 and 195.

II. Notice of appeal was filed in a letter dated 19 and received on 22 December 2003, together with the appropriate fee. A statement setting out the grounds of appeal and including amendments to the description was received on 8 March 2004.

III. In a communication accompanying a summons to oral proceedings to be held on 7 September 2006 the board gave its preliminary opinion that the claimed subject-matter did not involve an inventive step citing, in addition to D1 and D2,

D3: EP 0 491 657 A

IV. In preparation for the oral proceedings the appellant submitted a first new set of claims on 4 August 2006, subsequently replaced by a further set of claims on

4 September 2006. The single independent claim 1 of the latter set reads as follows:

"A network connection system for injection presses for plastics, comprising a plurality of injection presses (1) destined to be connected to a network managed by a server (4) to share common resources and exchange data, each injection press (1) comprising an industrial computer (11) that controls operation of the press, characterized in that it further comprises:

- radio communications devices (12) installed in said industrial computers (11) of the injection presses (1), and

- at least a wireless communication device (12; 20) connected to said server (4) for communicating with said radio communications devices (12) installed in said industrial computers (11) of the injection presses (1), through radio communication in frequency bands available for radio communications, so that a wireless network is formed between said industrial computers (11) of injection presses (1) and said server (4)."

V. At the oral proceedings the appellant requested that the decision be set aside and that a patent be granted on the basis of

claims 1 to 14 filed with letter of 4 September 2006.

VI. At the end of the oral proceedings the chairman announced the board's decision.

Reasons for the Decision

1. *Admissibility of the request*

1.1 The final set of claims was submitted only three days before the oral proceedings. However in substance the amendment was simply to make the independent claim of 4 August 2006, which contained unnecessary repetitions, more readable. In turn the claim set submitted on 4 August 2006 was directly derived from the originally filed claims, with a restriction making a feature which had originally been optional ("in particular injection presses for plastics") mandatory. The board therefore decided to admit the late-filed request.

2. *Inventive step*

2.1 The invention is directed to a network connection system for injection presses for plastics. Known networks are hard-wired. In accordance with claim 1 the injection presses are connected to the central server by the elements of a wireless network.

2.2 D1 states at Paragraph [0004] that it was known in the art to connect injection presses to a central control computer using a LAN. It is not expressly stated that a wired LAN is meant, but the board understands this to be implied. The injection presses include an "SPS" ("Speicherprogrammierbare Steuerung", i.e. a controller with a program in memory) and a "Bedieneinheit" which together constitute an "industrial computer" as defined in the current independent claim. This corresponds to the prior art described in the application (Paragraph [0002] of the published application) and is considered

by the board to represent the closest prior art in this case.

- 2.3 D2 consists of extracts from a textbook and represents common general knowledge for the skilled person in the field. At pages 8 to 14 it discusses the advantages of wireless LANs, including for example at page 13, "Long-Term Cost Savings", the ability to change the layout of the connected devices easily, also discussed in the application (Paragraph [0009]). At least some of the advantages discussed in D2, for example flexibility of layout, would apply just as much to a LAN connecting injection presses as to any other LAN. Thus the skilled person would be motivated to consider replacing the known wired LAN connecting injection presses by a wireless LAN.
- 2.4 The appellant argued that the skilled person would not however actually try to apply the teaching of D2, i.e. the commonly known advantages of wireless LANs over wired LANs, for a number of reasons which were presented as follows:
- 2.4.1 There is no teaching in D2 to use wireless LANs in an industrial context;
- 2.4.2 Industrial computers are not the same as office computers and use real-time operating systems - this meant that the appellant had to write special drivers;
- 2.4.3 The skilled person would expect a room containing injection presses to be a poor environment for wireless, since (a) there are transient electrical phenomena caused by inverters, (b) large metallic masses cause

reflection of microwaves, and (c) large amounts of materials containing water absorb microwaves - in fact the appellant had to implement new error-correcting protocols and take care in positioning antennas to overcome these difficulties.

2.5 Firstly the board notes that the appellant has not argued that overcoming the problems put forward in 2.4.2 and 2.4.3 involves an inventive step. Indeed if overcoming these problems did involve an inventive step the application would not satisfy Article 83 EPC, since the measures implemented to overcome these problems are not disclosed in the application. The application can only be considered to satisfy Article 83 EPC if any measures necessary to realise the invention but not disclosed in the application can be supplied by the skilled person from common general knowledge in the field. Hence the board concludes that these measures are to be considered to be within the capabilities of the skilled person. The only question is whether awareness of these potential problems would be sufficient to outweigh the known advantages of wireless networks and therefore prejudice the skilled person against the idea of replacing the known wired network with a wireless network.

2.6 With respect to the Point 2.4.1 the board observes that while D2 does not describe a situation closely related to the present application, it does encourage the use of wireless communications in industrial contexts (oil exploration, see "Case Study 1.4" on pages 13 and 14) and in apparently "hostile" environments (Formula 1 racing, see page 8, lines 23 to 27). The appellant argued that these were point-to-point connection

systems, rather than networks. In the racing case however D2 specifically refers to this being an application of "wireless networking" and in general the board cannot see D2 as discouraging the application of wireless techniques in the industrial context; rather, it encourages the skilled person to consider replacing wired systems with wireless across the whole spectrum of network applications.

2.7 As to Point 2.4.2 the board observes that although it would undoubtedly be necessary to change the drivers in replacing a wired network by a wireless network, this would not entail changing to a real-time operating system driver from a non-real-time operating system driver, as the appellant seems to argue. The nearest prior art being considered is a hard-wired LAN connecting the industrial computers of injection presses. The industrial computers of the prior art are necessarily real-time systems. The board notes moreover that the application does not mention the requirement for real-time operation and that the only operating systems actually named ("DOS, Windows and UNIX," Paragraph [0003]) are not in fact real-time operating systems. The board considers that the skilled person would take the development of appropriate drivers to be a normal part of the development process and would not be discouraged from taking this path by the necessity to do so.

2.8 With respect to Point 2.4.3, no evidence in support of the contention that the skilled person would have a technical prejudice against the use of wireless has been presented by the appellant. The board does not consider that the alleged difficulties posed by the

working environment would be sufficient to put the skilled person off testing to see whether replacement of a wired by a wireless LAN is possible; evidently he or she would find that it is possible without any extraordinary measures (see Point 2.5). The board notes that the application also gives reasons why a room containing injection presses is also a hostile environment for a wired network (see Paragraphs [0008], [0010] and [0011]). It is clear that changes generally bring new problems but as long it can be foreseen that they will be overcome in the course of routine development efforts the board does not consider that the skilled person would be put off pursuing a technical goal the desirability of which is well known.

- 2.9 Thus the board does not find the appellant's arguments convincing and concludes that it would be obvious to modify the known network connection system for injection presses for plastics to use a wireless rather than a wired network. Thus the subject-matter of the current independent claim does not involve an inventive step. There being no other requests the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

D. Magliano

A. S. Clelland