

Internal distribution code:

- (A) Publication in OJ
(B) To Chairmen and Members
(C) To Chairmen
(D) No distribution

**Datasheet for the decision
of 8 July 2008**

Case Number: T 0966/05 - 3.5.05

Application Number: 97907535.5

Publication Number: 0817995

IPC: G06F 1/16

Language of the proceedings: EN

Title of invention:

Integrated, reconfigurable man-portable modular system

Applicant:

Raytheon Company

Opponent:

-

Headword:

Man-portable modular system/RAYTHEON

Relevant legal provisions:

EPC Art. 52(1)

Relevant legal provisions (EPC 1973):

EPC Art. 56, 84

Keyword:

Inventive step (main request and auxiliary request - no)

Decisions cited:

-

Catchword:

-



Case Number: T 0966/05 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 8 July 2008

Appellant: RAYTHEON COMPANY
141 Spring Street
Lexington,
Massachusetts 02173 (US)

Representative: Wegener, Mark
Witte, Weller, Gahlert
Otten & Steil
Patentanwälte,
Rotebühlstraße 121
D-70178 Stuttgart (DE)

Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 21 March 2005
refusing European application No. 97907535.5
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chairman: D. H. Rees
Members: M. Höhn
P. Schmitz

Summary of Facts and Submissions

I. This is an appeal against the decision of the examining division dated 21 March 2005 to refuse application number 97907535.5. The decision was based on prior art documents

D1: WO 95/16948 A,
D2: EP 0 545 527 A,
D3: US 5 005 213 A.

According to the decision independent claim 1 of the main request and auxiliary request lacked clarity (Article 84 EPC 1973) and lacked an inventive step (Article 56 EPC 1973) over prior art document D1 when combined with document D2 (main request) and in addition with D3 (auxiliary request).

II. Notice of appeal was filed and the appeal fee paid on 20 May 2005. A statement of grounds of appeal including a new set of claims forming the sole request was received on 9 June 2005. It was requested that the appealed decision be set aside and a patent be granted on the basis of this request. Oral proceedings were requested on a precautionary basis.

III. With a communication dated 3 April 2008 the Board summoned the appellant for oral proceedings to be held on 8 July 2008 in accordance with the appellant's auxiliary request. In the annex to the summons the board expressed the preliminary opinion that the subject-matter of independent claim 1 did not satisfy the requirements of Article 84 EPC 1973 and 123(2) EPC and in addition was obvious in the light of document D1

when combined with the teaching of document D3 (Article 56 EPC 1973).

IV. On 9 June 2008 the appellant filed an amended set of claims 1 to 12 forming a new main request and an additional set of claims 1 to 13 as an auxiliary request together with arguments addressing the board's objections expressed in the annex to the summons to oral proceedings.

V. Independent claim 1 of the main request reads as follows:

"1. An integrated man-portable modular system (100) capable of providing a soldier with real-time situational awareness and advanced communications capability, the modular system (100) having modular subsystems (200, 300, 600) comprising:
a plurality of reconfigurable modular subsystems (200, 300, 600) for providing said real-time situational awareness and advanced communications capability,
a computer/radio subsystem (200),
a protective clothing and individual equipment subsystem (600),
a software subsystem (300);
a load carrying equipment (601) for carrying modular subsystems (200, 300) by the soldier and facilitating flow of information between modular subsystems (200, 300, 400, 500) and the soldier; and
a data control device (201a) for operatively processing and controlling the flow of information between said modular subsystems (200, 300) and the soldier, said

computer/radio subsystem (200) including said data control device (201a), characterized by an integrated helmet assembly subsystem (400), and a weapon subsystem (500), said weapon subsystem (500) having a laser range finder/digital compass assembly (530) and being adapted to sense information and transmit sensed information to said data control device (201a), and said integrated helmet assembly subsystem (400) being adapted to display information processed by said data control device (201a), said information including range, azimuth, and elevation data pertaining to a chosen target."

Independent claim 1 of the auxiliary request reads as follows:

"1. An integrated man-portable modular land warrior system (100) capable of providing a soldier with real-time situational awareness and advanced communications capability, the modular system (100) comprising the following modular subsystems (200, 300, 400, 500, 600):
i) a computer/radio subsystem (200) for providing computing resources in order to collect, consolidate and manipulate data for display, and controlling data flow between said subsystems; and original claim 15 [sic], the computer/radio subsystem (200) being embedded in a load carrying equipment (601), the computer/radio subsystem (200) comprising a computer (201a) having video processing capability, and preferably a squad radio (241a), soldier radio (241b), an Information Security module (242) or a global positioning system receiver (245);
ii) a weapon subsystem (500) including a modular weapon (536), a thermal weapon sight (525), a video camera

(535) and a laser range finder/ digital compass assembly (530) operably connected to the modular weapon (536) for allowing target identification and engagement at longer ranges with increased firing precision, display of own position and squad members, and navigation way-point information;

iii) an integrated helmet assembly subsystem (400) comprising a helmet shell (402), a sensor/display assembly (432), and an audio headset assembly (450), the audio headset assembly (450) and the sensor/display assembly being connected to the computer/radio subsystem (200);

iv) a protective clothing and individual equipment subsystem (600) comprises said load carrying equipment (601) for carrying said subsystems by the soldier as an integrated unit and facilitating the flow of information between said subsystems and the soldier; and original claim 15 [sic]; and

v) a software subsystem (300) including system software, application software, and mission data support software, the software subsystem (300) being configured so that software associated with each subsystem is portable and interchangeable between the subsystems;

wherein the weapon subsystem (500) is integrated with the computer/radio subsystem (200), and the integrated helmet assembly subsystem (400) forming one complete system (100) enabling the soldier to fully utilize the capabilities of all the subsystems."

VI. Oral proceedings were held on 8 July 2008 during the course of which the appellant presented arguments in favour of an inventive step of the independent claims and requested that the decision under appeal be set aside and that a patent be granted based on the main

request (claims 1 to 12) or the auxiliary request (claims 1 to 13) both filed with the letter of 9 June 2008.

VII. After deliberation the board announced its decision.

Reasons for the Decision

1. Main request

2. Inventive Step

2.1 D1 is considered the closest prior art on record and discloses the basic concept of modular subsystems involving the use of a microcomputer based communication between different subsystems for military purposes (D1, e.g. figure 1 and p. 14, l. 20 to p. 15, l. 8). The skilled person also derives the information that further subsystems can be added and data flow can take place in the same way as between the subsystems that already exist. The appellant has not disputed that the disclosure of D1 shows all the features of the preamble of claim 1.

The distinguishing features with regard to document D1 are therefore the following subsystems according to the characterising portion of claim 1:

(a): a weapon subsystem having a laser range finder/digital compass assembly and being adapted to sense information and transmit sensed information to the data control device and

(b): an integrated helmet assembly subsystem being adapted to display information processed by the data

control device, the information including range, azimuth, and elevation data pertaining to a chosen target.

- 2.2 The examining division argued that the combination of multiple modular subsystems was considered an aggregation of features solving partial problems because no extra technical effect was achieved by the distinguishing features taken in combination (see section 4 of the grounds of the appealed decision) and, hence, distinguishing features (a) and (b) solved partial problems and could be assessed separately.

The appellant disagrees with this point of view and has argued in the appeal proceedings that distinguishing features (a) and (b) solve an overall problem and provide for a combination invention.

- 2.3 A minimum qualification for an inventive step in a combination invention is a new combinative technical effect beyond the sum of the normal effects of single known features. Furthermore, the combination must not be obvious.

- 2.4 The alleged overall problem formulated by the appellant based on the distinguishing features of the characterizing portion is to increase the flow of battlefield information in order to increase the lethality and survivability of a soldier wearing a man-portable modular system without introducing cognitive overload (see p. 9, last paragraph of the statement setting out the grounds of appeal). However this problem is not solved by the features specified in claim 1. Firstly avoiding cognitive overload depends on

human perception and, hence, on individual mental factors of a soldier. Secondly the solution of this problem at the very least depends on the concrete type of data processing which, however, is not specified in claim 1. For the same reasons the problem of enhancing tactical capabilities formulated by the appellant in the letter of 9 June 2008 and repeated during oral proceedings is not considered to be solved by distinguishing features (a) and (b). The board therefore has to assess the inventive activity on the abstract level at which claim 1 is actually formulated.

2.5 As discussed above (point 2.1) document D1 discloses assisting a soldier by use of electronic equipment forming a modular system involving, among others, a microcomputer, sensing means, and communication between the components (see e.g. figure 1 and p. 14, l. 20 onwards). In order to implement this idea of equipping a soldier the skilled person must answer several questions such as where to put the sensors and how to display the information, the answers solving partial problems.

2.6 The application (see p. 12, l. 17-19) and the appellant's argumentation (see section 4, first par. of the statement setting out the grounds of appeal) indicate that the subsystems form one complete system enabling the soldier to "fully utilize the capabilities of all the subsystems". This amounts to saying that the resulting system provides the sum of the expected single effects of the subsystems used. As explained above (point 2.4) the appellant was not able to present a convincing argument that any new combinative technical effect beyond the sum of the normal effects

of the single features is achieved. The description of the application is silent in this regard, too.

2.7 The board therefore agrees with the examining division's approach that the additional provision of distinguishing features (a) and (b) can be dealt with separately since the two distinguishing features lack a combinative effect and thus only solve partial problems. The respective objective technical problems are therefore taken to be (a) to automatically acquire and provide information from a device that can be used as a weapon and (b) to provide a convenient display capability for target related data.

2.8 The concept of communicating information between single subsystems via a central microcomputer acting as data control device is known already from the closest prior art document D1. With the information found in D1 to provide the modular system with means for sensing information relevant for military operations including video, imaging and determining elevations or orientations (see D1, p. 14, l. 20 to p. 15, l. 8) and in order to solve the partial problem of feature (a) the skilled person would consider the teaching of document D3. The appellant agrees (see p. 10, last paragraph onwards of the grounds of appeal) that D3 shows a weapon mounted video camera which transmits video signals and thus, in the view of the board, which senses information and transmits the information to a remotely located display which is integrated into a helmet assembly (see e.g. figures 2, 17 and 18). Furthermore, laser range finders/digital compass assemblies are admitted to have been commercially available (see e.g. p. 15, l. 16-24 of the application

as filed). As D3 already suggests the value of range information (see D3, col. 5, l. 42) the skilled person would consider using a well known laser range finder/digital compass assembly without inventive skills. The solution according to feature (a) is therefore considered obvious.

2.9 Furthermore, it is already known from D1 to provide the information obtained from the different subsystems to other subsystems and evidently the skilled person would use a display to show any of the processed information of value to a soldier without inventive skills. Further document D3 mentions network distribution of video signals to multiple displays (see e.g. D3, col. 2, l. 48-55; figures 17 and 18) which would immediately suggest to the skilled person the use of a data control device as specified in claim 1. As D3 also suggests the use of a remotely located display which is integrated into a helmet assembly in order to display sensed and transmitted information from the weapon mounted video camera (see e.g. figures 2, 17 and 18) the skilled person would arrive at the solution of the second partial problem, i.e. feature (b), without the use of inventive skills. The helmet mounted display of D3 is even used to provide information such as range, size, elevation etc. (see D3, col. 5, l. 42), i.e. the same type of data as defined in feature (b). Hence, the solution of the partial problem corresponding to feature (b) is also obvious in the light of the teaching of document D3.

2.10 The appellant's arguments based on advantages achievable by the invention (see e.g. pages 8 and 9 of the grounds of appeal) are not convincing. Claim 1 does

not specify the technical features required to actually achieve these advantages, in particular it does not specify how to handle the data provided by the collection of components or any functional reciprocity which could lead to these advantageous results. The appellant puts much weight on the possibility of better communication and exchange of information among soldiers of a squad in the battlefield achieved by the invention. However, the subject-matter of claim 1 does not comprise any feature supporting such an effect beyond the bare mention of a radio. Claim 1 in substance merely specifies a number of components and that a flow of information is facilitated between those components, the information being processed and displayed, without specifying any technical details of the implementation. The advantages mentioned are therefore considered to be mere desiderata, as a concrete technical solution has not been specified in claim 1.

The appellant further argues that it took the applicant more than six years to integrate the known commercial components to form a functioning modular system according to claim 1 because of technical hurdles which had to be overcome. However, the application does not disclose what these hurdles are, and claim 1 does not specify the features required to overcome them. Moreover, despite the general features of this claim being regarded by the board as sufficiently disclosed for the skilled person to implement them to the extent of creating a system satisfying the claim, any advantages achieved are simply those which accrue from adding the known components, without there being any

technical hurdle overcome, in particular as regards the flow of information and processing the data.

- 2.11 Hence the board considers the subject-matter of claim 1 obvious in the light of D1 when combined with the teaching of D3 (Article 52(1) EPC and Article 56 EPC 1973). The main request is therefore not allowable.

3. **Auxiliary request**

- 3.1 The board notes that the subject-matter of claim 1 has formal deficiencies leading to objections under at least Article 84 EPC 1973. Features i) and iv) of claim 1 include the text "and original claim 15;" apparently in error. In feature iv) the load carrying equipment 601 is defined for carrying "said subsystems" which include the weapon subsystem 500 and the integrated helmet assembly subsystem 400. These, however, are separate from the load carrying equipment 601 according to the application as a whole. It is further claimed that "software associated with each subsystem is ... interchangeable between the subsystems". There is no basis for this feature in the rest of the application and it too would appear to arise from error in the formulation.

- 3.2 However in view of the fact that the claims could easily be corrected, the board will go on to consider the question of inventive step. In comparison with the main request claim 1 according to this request is defined by further aggregated features in the form of well known technical components serving their ordinary purposes and which, at least in part, are admitted in

the application documents to have been commercially available (see e.g. p. 15, l. 16-24; p. 19, l. 32-34).

- 3.3 Feature i) of claim 1 is known from document D1 (see section 2 above). The last portion following the expression "preferably" is optional and therefore does not limit the claim. Features ii) and iii) are obvious in the light of a combination of the teachings of D1 and D3 as disclosed in section 2 above, with document D1 additionally disclosing an audio headset assembly (see figures 15 and 18 of D1) as specified in feature iii) and geographic location sensing as well as multi-dimensional imaging, of which producing a map of own position and squad members as well as displaying navigation way-point information would be an obvious application (see D1, p. 14, l. 27 onwards) according to feature ii).
- 3.4 Putting aside the formal objections raised above (point 3.1), the software of feature v) is described as being of a commercially available type well known in the art (see p. 19, l. 32-33 of the original application). The board has no reason to doubt this, and the division into "system", "application" and "mission data support" software would appear to be nothing more than commonplace design being within the common general knowledge of the person skilled in the art. Moreover, document D1 discloses a modular system involving microprocessor means communicating with electrical components and can be considered to at least implicitly disclose the use of software for the same purpose as specified in feature v).

- 3.5 Documents D1 and D3 both teach the integration of corresponding subsystems in order to form a modular system enabling full utilization of the capabilities of all subsystems (see argumentation in section 2 above).
- 3.6 The board therefore considers the subject-matter of claim 1 obvious in the light of document D1 when combined with the teaching of document D3 and the skilled person's common general knowledge (Article 52(1) EPC and Article 56 EPC 1973).
4. The appellant drew the board's attention to the fact that a US Patent has been granted for the invention in the knowledge of D1 and D3 by the US Patent and Trademark Office. However, this fact does not change the view of the board, which has to examine the application under the European Patent Convention. The parallel US Patent was granted under US Patent Law which is a different legal basis.
5. Since there is no allowable request the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar

The Chairman

K. Götz

D. H. Rees