BL O/152/06

13th June 2006

PATENTS ACT 1977

APPLICANT Pablo Cappellini

ISSUE Whether patent application GB 2 381 884 A relates to a patentable invention

HEARING OFFICER Stephen Probert

DECISION

1 This decision concerns a patent application (GB 0117251.9) filed by Mr Pablo Cappellini, and whether that application should be granted. The patent examiner who examined the application has reported that the invention is a scheme, rule or method for performing a mental act, or doing business, and/or a program for a computer as such, but Mr Cappellini insists that it involves a technical contribution and is more than one of these excluded things "as such". The patent application was filed on 16th July 2001.

2 Because the applicant and the examiner could not agree, a hearing took place before me on 15th December 2005. The applicant represented himself. The examiner also attended in case I needed any assistance from him.

3 This case is a little unusual in one respect. Thirteen months after filing the application, Mr Cappellini started work as a patent examiner at the UK Patent Office. To avoid even the merest suggestion of foul-play, special measures were put in place to ensure that Mr Cappellini had no access to the official file, and all contact with the examiner dealing with the case had to be through the usual, external channels - ie. no correspondence by internal mail/email, and no corridor discussions with anyone associated with the case.

4 Of course, if Mr Cappellini had wished to view that part of the file that was laid open to public inspection when his application was published, he would have been allowed to see those parts of the file, but only after following the same procedure as any other member of the public. (In a similar vein, I understand that Mr Cappellini attended the hearing on 15th December in his own time - ie. he used his annual leave allocation.)

The Invention

5 The invention concerns a system for planning and varying the route(s) that carriers should take when delivering packages. More specifically, it is a method of enabling a carrier to describe a path (or route) that he plans to take, and also establishing the extent to which an individual carrier can deviate from the planned route. By allowing each carrier to deviate from the originally planned route, added flexibility is built into the system because eg. two carriers can be diverted from their route by a short distance to enable them to meet at a new "node" or "relay point" and exchange one or more packages.

The Claims

6 There were five independent claims in the application when the hearing began, but Mr Cappellini submitted some amended claims at the hearing, and deleted another claim immediately after the hearing. For the purposes of this decision, claim 1 is indicative of the final set of claims on the official file, and is the only claim that I need to reproduce here. (To avoid any misunderstanding over the precise form of the claims as of the date of this decision, I have included them all in Annex A at the end of this decision.) Claim 1 reads as follows:

> 1. A relay detection and coordination system for a computer-implemented geographically-simulated network of flexibly-defined paths, said paths corresponding to paths of real transportation carriers each having a predefined degree of geographical operational flexibility, which are to be coordinated, said system comprising:
>
> (a) a computerised geographical information system comprising a location system
>
> (b) a computerised relational path database, wherein for each flexibly-defined path there is provided:
>
> at least a waypoint or node,
>
> at least an associated area related to said waypoint or node, said area representing a predefined degree of geographical operational flexibility, both said waypoints and said areas, identifiable by coordinates in said location system, and
>
> a linkability condition,
>
> (c) an interface means for the input of a first location and at least a second location which need to be connected together by means of a relay,
>
> (d) a computer-implemented detection algorithm that, in use, uses data obtained from the interface means, the relation path database and from the geographical information system, said detection algorithm arranged to detect a relay according to a predefined criteria, wherein a set of detected paths constituting the relay is linked between each other by using at least one associated area of at least one of said detected paths,

(e) an output means set up to transmit operational coordination data to each real transportation carrier represented by each of the detected paths, whereby each real transportation carrier can, in use, be coordinated using this data, within its predefined area of geographical operational flexibility, so as to become a functional part of a real transport relay operation that mimics the relay detected in the geographically-simulated network.

The Law

7 The examiner has reported that the application is excluded from patentability because it relates to a scheme, rule or method for performing a mental act, or doing business, or a program for a computer as such. This objection is based on section 1(2) of the Act, the essential parts of which are shown in bold below:

> **1(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of -**
>
> (a) a discovery, scientific theory or mathematical method;
>
> (b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;
>
> (c) **a scheme, rule or method for performing a mental act**, playing a game **or doing business, or a program for a computer**;
>
> (d) the presentation of information;
>
> **but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.**

8 Mr Cappellini accepted that the correct legal test for patentability is that set out by Peter Prescott QC, sitting as a deputy judge, in the *CFPH* case [1]. That is:

> (1) Identify what is the advance in the art that is said to be new and not obvious (and susceptible of industrial application).
>
> (2) Determine whether it is both new and not obvious (and susceptible of industrial application) under the description "an invention" in the sense of Article 52 of the European Patent Convention (EPC) — broadly corresponding to section 1 of the Patents Act 1977.

Applying the test

9 Considering the first of the two steps of this test, Mr Cappellini says that the advance in the art that his invention provides is "a flexible path network concept, a search tool for that flexible path network and the practical application of providing an automated management/control system using that

[1] *CFPH LLC's Application* [2006] RPC 5 at page 259.

concept and that tool, for use in the execution of real transportation or transportation-related operations." [2]

10 Having read the patent application, I think I agree that this is the advance in the art that is said to be new, and not obvious etc.. But to avoid any misunderstanding over what I have considered the advance to be, I shall restate it using my own words. As I understand it, Mr Cappellini's invention is a new algorithm for planning a delivery route for a package, using a network of carriers. The algorithm is said to be new and not obvious because it permits the individual carriers in the network to deviate from their normal, predefined route in order to create new meeting places (called "nodes" or "relay points") where (in practice) two or more carriers can exchange one or more packages.

11 The movement and/or delivery of the packages themselves is not part of the invention as claimed, but nothing rests on this distinction. When the claims are correctly construed, the heart of the invention, and the contribution to the art, is the algorithm that works out where potential nodes or relay points in a distribution network could be generated.

12 According to the prior art, as Mr Cappellini explained it to me, the algorithm would only have searched for relay points among existing nodes - ie. times and places where the different carriers were routinely scheduled to meet. In order to expand such an algorithm to include the additional flexibility that is provided by allowing the carriers to deviate from their normal routes, Mr Cappellini has had to redesign the interface that is used to input the flexible paths to the algorithm, as well as the core of the algorithm that searches for potential relay points.

13 Although I may have chosen to express it using slightly different language, I don't think there is any significant difference between what I think the advance is said to be, and what Mr Cappellini thinks the advance is said to be.

14 That leaves the second of the two steps of the *CFPH* test, and this is where I disagree with Mr Cappellini. During his correspondence with the examiner, and to a lesser extent at the hearing, Mr Cappellini put forward a very wide range of arguments in support of his view that the advance provided by this invention represents 'an invention' in the sense of Article 52 of the EPC. For example, he said that the data that is manipulated by the algorithm corresponds to real-world physical entities, and that the system issues instructions to the practical effect of controlling a real transport operation. He added that the claim is tied down to an industrial activity (ie. transport) and that these types of inventions have generally been shown by the EPO case law to be inventions within the meaning of Article 52 of the EPC.

15 Even if I accept that this advance is new and not obvious, I am not persuaded by these arguments that it could meet these conditions under the description of 'an invention' in the sense of Article 52. In principle it is very similar to the

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[2]Paragraph 32 of Mr Cappellini's letter received in the Office on 19 September 2005.

mental processes that friends and relatives sometimes follow in order to transfer items among themselves on an ad-hoc basis. For example, if I wanted to transfer some Christmas presents to my sister in Reading, and I knew that a friend in Swansea often travelled to London, I might make a slight detour on my way to work one morning, having arranged to meet him at a motorway service area on the outskirts of Cardiff to give him the presents. An hour or two later my sister would then meet him at Reading services on the M4 to collect the presents and she could then distribute them to my friends and relatives in Reading.

16 In my experience, this sort of thing happens very frequently in families and among friends, and is a common mental activity. What we are doing, even if we wouldn't normally see it in these terms, is looking for suitable convenient relay points. As claimed, the invention uses computer technology to identify suitable relay points, but it is clear from the description of the invention (and for example from the opening words of claim 12) that computers are involved so that the system can cope with the vastly increased complexity of a national freight carrier network such as FedEx®, UPS®, TNT® etc.. The difference then, in principle, is one of scale, and the use of one or more suitably programmed computers to cope with the increased complexity.

17 Some of the dependent claims, (claims 9 & 10) include a further step of checking that each carrier involved in the flexibly-defined path has the capacity to carry the required load. In my view this is just plain common sense. To take my example above, I would not turn up at the motorway service area with a boot-load of bulky presents if my friend from Swansea was likely to be using his motorcycle that day. Arranging for computers to do this sort of thinking for us, perhaps because of the sheer scale involved, does not of itself lead to an invention in the sense of Article 52 EPC.

18 Whether one regards this invention as a method for performing a mental act, a program for a computer or a method of doing business probably depends on which aspect of the invention (as claimed) that one is considering. But an advance in any of these fields is not an advance under the description 'an invention' because these are excluded fields. What matters for the purposes of the decision I have reached, is whether there is any advance (that is said to be new and not obvious) that ***is*** an invention in the sense of Article 52 EPC. I have come to the conclusion that there is not.

19 Since the hearing in this matter, the Patents Court has re-stated the test for patentability using slightly language from that used in *CFPH*. The following passage from paragraph 186 of Mr Justice Pumfrey's judgment in *RiM v Inpro*[3] summarises the current position:

> "186. It is now settled, at least at this level, that the right approach to the exclusions can be stated as follows. **Taking the claims correctly construed, what does the claimed invention contribute to the art**

[3] *Research In Motion UK Ltd v Inpro Licensing* [2006] EWHC 70 (Pat)

outside excluded subject matter? The test is a case-by-case test, and little or no benefit is to be gained by drawing analogies with other cases decided on different facts in relation to different inventions." (My emphasis)

20 Although Pumfrey J expresses the test using different words, I do not doubt that it is fundamentally the same test as I have used from *CFPH*. If I had applied this test instead of the two step test from *CFPH*, I would have come to the same conclusion. Moreover, because it is fundamentally the same test, I do not think that Mr Cappellini would have been prejudiced in any way because he has not had an opportunity to address me in relation to it.

21 Whichever way I look at it, the contribution to the art that is made by the invention described and claimed in this application is entirely within excluded subject matter — ie. methods for performing mental acts, doing business or programs for computers as such.

Application in the field of Telecommunications

22 Mr Cappellini argued that because the algorithm at the centre of his invention could be used in the telecommunications field, eg. using smart (directional) antennae to establish new nodes within a network, and that such embodiments were within the scope of claim 1 (at least), his application should not be refused. But as he later conceded, someone would have to use some inventive ingenuity to adapt the invention to handle millions of data packets in the way that they are handled in a telecommunications network. Consequently I did not think that this argument assisted Mr Cappellini's case at all.

Direct Control

Mr Cappellini also relied upon the possibility that the carriers involved in the network could be controlled directly by the system — eg. using robotics, or the autopilot system of an aeroplane. But again, when I put it to him that the mechanism for transferring the route information to the network is entirely conventional, he conceded that it was. So I could not see how the existence of this option significantly affects the patentability of the invention either.

Conclusion

23 I have decided that the advance contributed to the art by the invention in this application is not an invention in the sense of Article 52 EPC, and is therefore excluded from patentability by section 1(2). It does not contribute anything to the art outside excluded subject matter. I have read the whole application carefully, and I cannot see any amendment that would overcome this deficiency. Consequently I refuse this application under section 18 on the grounds that it does not satisfy the requirements of section 1.

Appeal

24 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days of the receipt of this decision.

S J Probert
Deputy Director acting for the Comptroller

Annex A

1. A relay detection and coordination system for a computer-implemented geographically-simulated network of flexibly-defined paths, said paths corresponding to paths of real transportation carriers each having a predefined degree of geographical operational flexibility, which are to be coordinated, said system comprising:

    (a) a computerised geographical information system comprising a location system

    (ii) a computerised relational path database, wherein for each flexibly-defined path there is provided:

        at least a waypoint or node,

        at least an associated area related to said waypoint or node, said area representing a predefined degree of geographical operational flexibility, both said waypoints and said areas, identifiable by coordinates in said location system, and

        a linkability condition,

    (c) an interface means for the input of a first location and at least a second location which need to be connected together by means of a relay,

    (d) a computer-implemented detection algorithm that, in use, uses data obtained from the interface means, the relation path database and from the geographical information system, said detection algorithm arranged to detect a relay according to a predefined criteria, wherein a set of detected paths constituting the relay is linked between each other by using at least one associated area of at least one of said detected paths,

    (e) an output means set up to transmit operational coordination data to each real transportation carrier represented by each of the detected paths, whereby each real transportation carrier can, in use, be coordinated using this data, within its predefined area of geographical operational flexibility, so as to become a functional part of a real transport relay operation that mimics the relay detected in the geographically-simulated network.

2. The system of claim 1 wherein the output means comprises a communication system further connected to a transducer, such as a sensor, a detector, or a physical signal converter

3. The system of claim 1 wherein the output means comprises a communication system further connected through a cable or wireless connection to a transducer, such as a sensor, a detector, a physical signal converter or an adaptor.

4. The system of claim 1 wherein the output means comprises a communication system further connected through a cable or wireless connection to an intelligent interface device of a carrier

5. The system of claim 1 wherein the output means comprises a communication system further connected through a cable or wireless connection to an intelligent interface device of a carrier, when used in conjunction with detected carriers.

6. The system of claim 1 wherein the output means comprises a communication system further connected through a cable or wireless connection to an intelligent interface device of a carrier, said system further comprising a plurality of detected carriers coordinated by the system.

7. The system of claim 1 further comprising means for printing a coded stamp, said stamp comprising destination and tracking data.

8. The system of claim 1 further comprising input means, said input means comprising a transducer, such as a sensor, a scanner or an automatised data transducer.

9. The system of claim 1 wherein for each flexibly-defined path there is further provided an available capacity and the system further comprising automated input means, said input means comprising a transducer/scanner for scanning the physical dimensions and origin/destination data of at least a load to be carried through a relay.

10. The system of claim 1 wherein for each flexibly-defined path there is further provided an available capacity, and wherein the interface means comprises means to define a required load to be relayed between said connected first and second location, and said capacity is managed with aid of a simulation subsystem that is at least three dimensional, wherein said subsystem automatically establishes whether the said load can be absorbed within the said available capacity of each of all the paths that are detected as part of a relay.

11. A method of coordinating a transportation process involving a relay, based on detection of a relay in a computer-implemented geographically-simulated network of flexibly-defined paths, said paths corresponding to paths of real transportation carriers each having a predefined degree of geographical operational flexibility, which are to be coordinated, said method comprising:

    providing a computerised geographical information system comprising a location system,

providing a computerised relational path database, wherein for each flexibly-defined path there is provided:

at least a waypoint or node,

at least an associated area related to said waypoint or node, said area representing a predefined degree of geographical operational flexibility, both said waypoints and said areas, identifiable by coordinates in said location system, and

a linkability condition,

providing an interface means for the input of a first location and at least a second location which need to be connected together by means of a relay,

providing a computer-implemented detection algorithm that uses data obtained from the interface means, the relation path database and the geographical information system

detecting with said computer-implemented detection algorithm a relay according to a predefined criteria, wherein a set of detected paths constituting the relay is linked between each other by using at least one associated area of at least one of said detected paths,

providing an output means set up to transmit operational coordination data to each real transportation carrier represented by each of the detected paths,

transmitting operational coordination data to each said real transportation carriers, whereby each said real transportation carriers can be coordinated using this data, within its predefined area of geographical operational flexibility, so as to become a functional part of a real transport relay operation that mimics the relay detected in the geographically-simulated network,

the operational coordination data for use in the coordination or control of an industrial transportation process involving a relay.

12. A network relay transportation system comprising a distributed management and coordination system and a plurality of transport carriers that form a network, the management and/or control system comprising:

a communications means (066, 053),

spatial information and location means (059, 058) capable of discrete storage, retrieval, manipulation and computation of spatial or geographic data related to spatial or geographical logically-coded elements capable of identifying a location in the said location means

an operative link to an electronic relational database (5106, 075) representative of the network to be managed, the database having stored therein a plurality of carrier transport paths representing the functional operation or future functional operations of said plurality of transport carriers said paths defined by at least one waypoint parameter (031, 2736), at least an associated area/space (030, 106, 108, 2754) and at least a link ability condition (110 in part, 2756) both said area/space and link condition related to said at least one waypoint parameter (110).

computerised search and retrieval means (065) operatively linked to said database for finding and assembling combinations of said paths or partial parts of said paths which linked together can perform the said requested task

input/output means (053) operatively linked to first interface means (2700-2954) arranged for inputting data, relating to at least on of said transport paths, into said electronic relational database, said interface means comprising means for defining:

a waypoint parameter (2736),
an associated area/space (2746) and
a link ability (2748) condition,

said input/output means (053) further operatively linked to second interface means (2955-2994) arranged for inputting data, relating to a transport connection task between a first location and at least a second location, into said electronic relational database, said interface means comprising:

means for defining said first location (5110),
means for defining one of (i) a second location (5112) or
(ii) a function parameter (5140)

means for default selection, or third interface means for active selection, (1434) of at least one possible option (1430) available for the requested task, said third interface means operatively linked to said input/output means.

said input/output means (053) further capable, upon active or default selection on said selection means, of conveying carrier task instructions (1460, 1462, 1468, 1470, 3010, 3012, 3016, 3018, 2994, 095,1462, 3012), for the execution of a connection task,

said communication means arranged, in combination with said output means, and upon said active or default selection, to relay a plurality of connection task instructions, to a plurality of system-selected carriers involved in the selected possible option(s) (1420),

said system-selected carriers having their operations represented in said database, instruction receiving means and operator means for modifying their functional operation according to said task instructions in a manner so that said

carriers can be linked between each other to form a relay that performs the said transport connection task.

13. A method of processing of loads comprising the steps of
Providing a GIS system that converts at least one flexible path planned by a carrier, each path defined by at least one waypoint parameter and at least one associated area parameter, into a set of coordinates that represent the said flexible path,
Storing said paths along with at least one linking condition for at least one waypoint parameter or associated area, into a searchable database,
Providing an interface to accept a load processing request from a first location to at least a second location,
Said GIS system further capable of converting said first and second locations into a second set of coordinates that represent said locations,
Determining coordinate match between said location coordinates and said flexible path coordinates.
Retrieving from the said database a set of flexible path coordinates corresponding to each path where at least one coordinate has been matched to the first location and to each path where at least one coordinate has been matched to the at least second location, said set being only of coordinates related to the at least one waypoint or associated area that was stored with at least one linking condition,
Determining coordinate match between at least two of said set of coordinates corresponding to different paths, at least one matched with the first location and at least another matched with the at least one second location.
Determining a relay between two paths whose flexible area combined matches that of the first location and at least one of the second locations,
Coordinating the carriers represented by the two paths, by transmitting operative data for mimicking the said relay determined in the above step, so as to process a load according to the said load processing request,
Said method for use in the coordination, or control-via-operator-or-transducer of the physical processing of loads in relay fashion.