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Datasheet for the decision of 12 June 2019

Case Number: T 0952/17 - 3.5.05

Application Number: 06000324.1

Publication Number: 1696310

IPC: G06F3/12

Language of the proceedings: EN

Title of invention:
Print job queuing and scheduling systems and methods

Applicant:
Microsoft Technology Licensing, LLC

Headword:
Print job queuing and scheduling / Microsoft

Relevant legal provisions:
EPC 1973 Art. 54(1)
EPC Art. 84
RPBA Art. 13(1)

Keyword:
Novelty - main and first auxiliary requests (no) - second auxiliary request (no) - subset of items in a list forms part of the state of the art
Late-filed auxiliary requests - admitted (no) - request clearly allowable (no) - amendments after arrangement of oral proceedings - diverging versions of claims

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

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Case Number: T 0952/17 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 12 June 2019

Appellant: (Applicant)	Microsoft Technology Licensing, LLC One Microsoft Way Redmond, WA 98052 (US)
Representative:	Goddar, Heinz J. Boehmert & Boehmert Anwaltspartnerschaft mbB Pettenkoferstrasse 22 80336 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 16 November 2016 refusing European patent application No. 06000324.1 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Ritzka
Members:	N. H. Uhlmann
	G. Weiss

Summary of Facts and Submissions

I. The appeal is against the examining division's decision to refuse European patent application No. 06000324.1.

II. The reasons for the decision under appeal refer to the following documents:

D1 US 2004/190057;
D2 EP 0 873 007;
D3 US 2004/184071.

III. The examining division decided that the main request and auxiliary requests 1 and 2 do not meet the requirements of Article 56 EPC. Under Rule 137(3) EPC, auxiliary request 3 was not admitted into the proceedings.

IV. In a statement setting out the grounds of appeal the appellant requested that the decision under appeal be set aside and that a patent be granted based on the claims of the main and the first auxiliary request, the former corresponding to auxiliary request 2 underlying the decision under appeal.

V. The board arranged for oral proceedings to be held.

VI. In the summons, the board set out its provisional view of the case. The board considered that the requirements of Article 54 EPC 1973 had not been met.

VII. In response, the appellant filed an amended main request and first to third auxiliary requests to replace all requests previously on file, and submitted further arguments.

VIII. Oral proceedings were held on 12 June 2019 and were attended by the appellant.

IX. In the course of the oral proceedings, the appellant replaced the third auxiliary request with the third auxiliary request (new).

X. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or the first or second auxiliary requests, all requests filed with its letter dated 10 May 2019 or on the basis of the claims of the third auxiliary request (new) filed at the oral proceedings before the board.

XI. Claim 1 of the main request reads as follows:

"One or more computer-readable media having computer-readable instructions thereon which, when executed, implement a computer architecture characterised by comprising:

multiple prioritizers (268) configured and associated together to define a sequence of prioritizers for a print queue of print jobs destined for a physical printer, wherein said sequence of prioritizers is configured to pruduce (sic) a tuple of multiple priority values associated with a print job for use in scheduling said print job; and

a scheduler (252) configured to process said tuple and to schedule the print jobs destined for the physical printer for the print queue using the multiple priority values of said tuple."

XII. Claim 1 of the first auxiliary request differs from claim 1 of the main request in that the wording

", wherein each prioritizer (252) is selected from a group of multiple different types of prioritizers, and wherein a first type comprises a relative priority prioritizer that produces data

that is a set of numeric weights used to rank one print job against another print job destined for the physical printer"

has been added before the full stop.

XIII. Claim 1 of the second auxiliary request differs from claim 1 of the main request in that the wording

", wherein each prioritizer (252) is selected from a group of multiple different types of prioritizers which comprises:

a relative priority prioritizer that produces data that is a set of numeric weights used to rank one print job against another print job;

a global priority effect prioritizer that utilizes a global priority effect as a modifier that influences the relative weight of one printing device against another printing device;

a time FIFO prioritizer that utilizes a time field that allows a print job to receive an overriding boost in priority after an elapsed time; and

a time boost prioritizer that utilizes a time boost field that allows a print job to receive a boost in priority"

has been added before the full stop.

XIV. Claim 1 of the third auxiliary request (new) reads as follows:

"One or more computer-readable media having computer-readable instructions thereon which, when executed, implement a computer architecture characterised by comprising:

multiple prioritizers (268) configured and associated together to define a sequence of prioritizers for a print queue, wherein said sequence of prioritizers is configured to pruduce (sic) a tuple of multiple priority values associated with a print job for use in scheduling said print job; and

a scheduler (252) configured to process said tuple and to schedule print jobs for the print queue using the multiple priority values of said tuple,

wherein said computer-readable instructions further utilize priority queues to assist the scheduler (252) in scheduling print jobs,

wherein a first type of priority queue comprises a printer priority queue (300, 302) that represents a relative print job prioritization in a print queue associated with a printing device; and
a resource arbitration queue (310) that represents a queue of print queues, and

wherein said priority queues are utilized to maintain data representing a print job's priority, the dada (sic) comprising:

a relative priority tuple for individual print jobs that is a set of numeric weights,
a global priority effect that is a single value indicating an effect of processing a particular print job on an associated printing device's global priority, and
a hold count that can be used to hold a print job in a print queue and release it at a later stage."

Reasons for the Decision

1. The invention

The application relates to the scheduling of print jobs.

The problem addressed is how to schedule such jobs more flexibly and provide improved queuing and scheduling.

The application suggests the use of a plurality of prioritizers that produce a number of priority values for each job, all of which should be considered during scheduling.

2. Prior art

Document D1 discloses methods for scheduling print jobs and the steps involved in those jobs.

Main request

3. The subject-matter of claim 1 is not novel.

3.1 In the board's judgment, the term "print queue" as used in claim 1 is to be interpreted as temporary storage for data pertaining to print jobs. In particular, the queue as claimed is not a data structure of the first-in-first-out (FIFO) kind, because print jobs are to be processed based on multiple priority values, and not solely on their arrival time. Moreover, the print queue is not associated with a specific or particular physical printer: claim 1 merely refers to "a print queue of print jobs destined for a physical printer".

3.2 Further with regard to claim interpretation, the board holds that the tuple as claimed is to be interpreted as any collection of two or more values. In this regard,

claim 1 does not define any specific data types or data structures of the tuple.

3.3 Prior-art document D1 describes a system and a method in which print jobs and the steps involved in such jobs are scheduled by a process control manager 111 (see paragraphs 9, 89 and 99). One of the steps is the actual printing by one or more image-forming devices or apparatuses (paragraphs 359 and 391). Data for the plurality of print jobs, which are clearly destined for a physical printer, is stored in form of Job Definition Format (JDF) entries. Such entries anticipate the print queue as claimed (paragraphs 263 to 271, Figure 23, item 2103). While scheduling print jobs and the corresponding steps, the process control manager uses a number of priority criteria, namely cost, delivery date, quality and input, or acceptance, order (paragraphs 448, 449, 450, 451 and 453). Paragraph 451 teaches further that the user might define a priority among those four priority criteria and describes a sequence of priorities, for example "cost order>quality order>delivery order>acceptance order". Those four ordered priority criteria are used by the process control manager for scheduling of the print jobs and anticipate the tuple of multiple priorities as claimed. At the same time, the software that makes the ordered priority criteria available to the process control manager qualifies as a sequence of prioritizers.

3.4 The appellant argued that document D1 related to the scheduling of a workflow of jobs that included a plurality of processes and not to the scheduling of print jobs for a print queue which were destined for a physical printer.

The board disagrees. First, claim 1 does not state that the print job to be scheduled may not include a number

of steps. Indeed, paragraph 12 of the present application confirms that a rendering and a printing operation may belong to a print job. Secondly, the job workflow of document D1 clearly comprises a printing step, which makes use of the JDF data depicted in Figure 23. Thirdly, the system described in document D1 can comprise one image-forming device or apparatus (abstract, paragraph 359). Hence, the print jobs are eventually destined for the one image-forming device. Finally, the board observes that while Figure 1 of document D1 depicts a number of printers, the description encompasses also embodiments with one printer only.

3.5 The appellant submitted that the scheduler of document D1 would use only one priority order, pointing to a number of paragraphs in this document.

The board is not persuaded: paragraph 451, to which the Examining Division referred in the appealed decision, discloses the use of four priority orders, as set out in section 3.3, *supra*.

3.6 In view of these considerations, the subject-matter of claim 1 lacks novelty having regard to document D1.

First auxiliary request

4. The subject-matter of claim 1 is not novel.

4.1 The subject-matter of claim 1 is further limited by the following features:

> wherein each prioritizer is selected from a group of multiple different types of prioritizers, and wherein a first type comprises a relative priority prioritizer that produces data that is a set of numeric weights used to rank one print job against

another print job destined for the physical printer.

4.2 Document D1 discloses these features. Paragraph 450 explains priority based on the cost of print jobs and that the jobs are processed in descending order of cost. The board holds that the cost of a print job is a numerical value and that it is used to rank the print jobs based on the cost, i.e. the jobs for which a client paid more are processed before those for which the client paid less. As set out in section 3.4, *supra*, the print jobs are destined for the physical printer. Furthermore, document D1 discloses different types of priority orders.

4.3 The appellant argued that "set of numeric weights" would imply two or more numeric weights.

The board is not persuaded. First, the plain meaning of a "set of values", in the context of software engineering, encompasses the case of a set comprising one value. Secondly, in view of paragraph 59 of the application in suit, "set of (numeric) weights" means the collection of all weight values which may be assigned to jobs, for example 0, 0.1, 0.2 ... 1, every job having precisely one relative priority value.

4.4 Consequently, the subject-matter of claim 1 lacks novelty having regard to document D1.

Second auxiliary request

5. The subject-matter of claim 1 is not novel.

5.1 The subject-matter of claim 1 is further limited, vis-à-vis claim 1 of the main request, by the following features:

wherein each prioritizer is selected from a group of multiple different types of prioritizers which comprises:

a relative priority prioritizer that produces data that is a set of numeric weights used to rank one print job against another print job;

a global priority effect prioritizer that utilizes a global priority effect as a modifier that influences the relative weight of one printing device against another printing device;

a time FIFO prioritizer that utilizes a time field that allows a print job to receive an overriding boost in priority after an elapsed time; and

a time boost prioritizer that utilizes a time boost field that allows a print job to receive a boost in priority.

5.2 Claim 1 encompasses an embodiment comprising two prioritizers, wherein the first prioritizer is selected to be a relative priority prioritizer and the second prioritizer is selected to be a global priority effect prioritizer. A prior-art document that comprises a teaching corresponding to such an embodiment, i.e. disclosing these two and not all four claimed types of prioritizer, would be prejudicial for the novelty of the subject-matter of claim 1.

5.3 Document D1 discloses a prioritizer that is a relative priority prioritizer, as set out with regard to the first auxiliary request.

5.4 D1 also discloses that the relative weight of one printing device against another printing device can be modified. Paragraphs 416, 417 and 420 teach that, in job-clustering mode, in which jobs are distributed to a

plurality of printers of an identical type, the operator is able to set a printer priority order. In the board's judgment, the printer priority order corresponds to the relative weight of the printing devices. The global priority effect prioritizer, hence, is disclosed in document D1.

5.5 In view of these considerations the subject-matter of claim 1 lacks novelty having regard to document D1.

Third auxiliary request (new)

6. Admissibility

The board exercises its discretion pursuant to Article 13(1) RPBA not to admit the request.

6.1 This request was filed in the course of the oral proceedings before the board, i.e. at a very late stage in the appeal proceedings.

6.2 The appellant argued that both the third auxiliary request and the new third auxiliary request formed a direct reaction to the novelty objection first raised in the board's communication pursuant to Article 15(1) RPBA.

The board disagrees. It is correct that an appellant should be given a fair chance to react to objections raised *ex officio* by a board. In the case at hand, the board admitted, implicitly, the main request and the first and second auxiliary request submitted by letter dated 10 May 2019. These three requests comprise amendments that limit the claimed subject-matter in a convergent way, which, in the board's view, represents an appropriate reaction to a novelty objection in the appeal stage. On the other hand, the third auxiliary request (new) comprises completely different amended limiting features. In particular, the limitation that

the print jobs are destined for a physical printer was removed and, instead of features pertaining to the prioritizer, claim 1 recites details of priority queues. The board holds that submitting requests comprising claims amended in different directions does not amount to a direct reaction to a novelty objection by the board and goes contrary to the need of procedural economy.

6.3 The appellant submitted that the amended independent claims correspond essentially to previously pending dependent claims and should therefore be admitted into the proceedings.
The board is not persuaded. The decision under appeal raised an inventive step objection against those dependent claims, which, however, was not addressed in either the statement of grounds or the submission of the appellant dated 10 May 2019. Thus, introducing these features only after oral proceedings were arranged creates a fresh case in appeal proceedings.

6.4 Amended claim 1 gives rise *prima facie* to a further objection. In particular, this claim defines two types of priority queues: printer priority queue and resource arbitration queue. The claim specifies that the priority queues, i.e. both the printer priority queues and the resource arbitration queues, are utilized to maintain three data items that represent a print job's priority. However, these data items make sense for a printer priority queue only, and not for a resource arbitration queue. Hence, claim 1 does not meet the clarity requirement of Article 84 EPC and is thus not clearly allowable.
As an aside, the board notes that this clarity objection was also raised in the course of the oral proceedings for the third auxiliary request.

6.5 Consequently, the third auxiliary request (new) was not admitted into the appeal procedure.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz-Wein A. Ritzka

Decision electronically authenticated