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Datasheet for the decision
of 30 September 2021

Case Number:	T 1112/19 - 3.5.03
Application Number:	13775157.4
Publication Number:	2837158
IPC:	H04L29/06, G06F17/30, H04L29/08
Language of the proceedings:	EN

Title of invention:
Systems and methods for scalable structured data distribution

Applicant:
Goldman Sachs & Co. LLC

Headword:
Replay of data/GOLDMAN SACHS

Relevant legal provisions:
EPC Art. 56
RPBA Art. 12(4)

Keyword:
Inventive step - main and first to fourth auxiliary requests
(no): any prior art rendering the claimed solution obvious is
a suitable starting point and no "problem invention"
Admittance of request filed with the grounds of appeal - fifth
auxiliary request - (no): "fresh case"

Decisions cited:
T 0002/83, T 0606/89, T 0910/90, T 0967/97, T 0698/10,
T 2101/12, T 0694/15, T 0816/16, T 1294/16, T 0261/19

Case Number: T 1112/19 - 3.5.03

D E C I S I O N
of Technical Board of Appeal 3.5.03
of 30 September 2021

Appellant: (Applicant)	Goldman Sachs & Co. LLC 200 West Street New York, NY 10282 (US)
Representative:	Barker Brettell LLP 100 Hagley Road Edgbaston Birmingham B16 8QQ (GB)
Decision under appeal:	Decision of the Examining Division of the European Patent Office posted on 13 November 2018 refusing European patent application No. 13775157.4 pursuant to Article 97(2) EPC.

Composition of the Board:

Chair	K. Bengi-Akyürek
Members:	J. Eraso Helguera
	N. Obrovski

Summary of Facts and Submissions

I.   The appeal was lodged by the applicant against the
        decision of the examining division to refuse the
        present European patent application for lack of
        inventive step (Article 56 EPC) with respect to the
        claims of a main request and four auxiliary requests.

II.   During the examination proceedings, the examining
        division referred *inter alia* to the following prior-art
        document:

        D1: US 2011/0246463 A1.

III.   Oral proceedings before the board were held on
        30 September 2021 by videoconference in accordance with
        the appellant's request.

        The appellant requested that the decision under appeal
        be set aside and that a patent be granted on the basis
        of the claims of any of a **main request** and **first to
        fourth auxiliary requests** subject to the impugned
        decision, or, alternatively, of a **fifth auxiliary
        request** filed with the statement of grounds of appeal.

        At the end of the oral proceedings, the board's
        decision was announced.

IV.   Claim 1 of the **main request** reads as follows:

        "A system comprising:
        a bundler (510) configured to:
            receive streaming raw data from a data
            producer (110);

    bundle the raw data into a series of data packages;
    and
    associate with each of the data packages a unique
    identifier having a monotonically increasing order
    based on upload from the data producer (110);
a transformer (530) configured to receive the data
packages having the associated unique identifiers and
generate loadable data structures for a reporting store
associated with a data subscriber;
a loader (550) configured to receive and store the
loadable data structures into a storage device
associated with the data subscriber based on the
monotonically increasing order;
a data channel configured to allow data from the data
producer (110) to be continuously streamed to the data
subscriber through the bundler;
a messaging channel configured to provide a current
status of the data being continuously streamed from the
data producer (110) to the data subscriber; and
a control channel separate from the data channel and
configured to allow the data subscriber to request
replay of the data."

Claim 1 of the **first auxiliary request** reads as follows
(board's highlighting indicating differences vis-à-vis
claim 1 of the main request):

"A system comprising:
a bundler (510) configured to:
    receive streaming raw data from a data
    producer (110);
    bundle the raw data into a series of data packages;
    and
    associate with each of the data packages a unique
    identifier having a monotonically increasing order

<u>comprising an increasing series of integers without</u>
<u>gaps,</u> based on upload from the data producer (110);
a transformer (530) configured to receive the data
packages having the associated unique identifiers and
generate loadable data structures for a reporting store
associated with a data subscriber;
a loader (550) configured to receive and store the
loadable data structures into a storage device
associated with the data subscriber based on the
monotonically increasing order;
a data channel configured to allow data from the data
producer (110) to be continuously streamed to the data
subscriber through the bundler;
a messaging channel configured to provide a current
status of the data being continuously streamed from the
data producer (110) to the data subscriber; and
a control channel separate from the data channel and
configured to allow the data subscriber to request
replay of the data."

Claim 1 of the **second auxiliary request** is identical to
claim 1 of the first auxiliary request, save for the
following addition at the end:

"wherein the streaming raw data comprises multiple
streams."

Claim 1 of the **third auxiliary request** reads as follows
(board's highlighting indicating differences vis-à-vis
claim 1 of the second auxiliary request):

"A system comprising:
a <u>computer-implemented</u> bundler (510) configured to:
   receive streaming raw data from a data
   producer (110);

bundle the raw data into a series of data packages; and

associate with each of the data packages a unique identifier having a monotonically increasing order comprising an increasing series of integers without gaps, based on upload from the data producer (110);

a computer-implemented transformer (530) configured to receive the data packages having the associated unique identifiers and generate loadable data structures for a reporting store associated with a data subscriber;

a computer-implemented loader (550) configured to receive and store the loadable data structures into a storage device associated with the data subscriber based on the monotonically increasing order;

a data channel configured to allow data from the data producer (110) to be continuously streamed to the data subscriber through the bundler;

a messaging channel configured to provide a current status of the data being continuously streamed from the data producer (110) to the data subscriber; and

a control channel separate from the data channel and configured to allow the data subscriber to request replay of the data;

wherein the streaming raw data comprises multiple streams."

Claim 1 of the **fourth auxiliary request** reads as follows (board's highlighting indicating differences vis-à-vis claim 1 of the third auxiliary request):

"A system comprising:

a computer-implemented bundler (510) configured to:

receive streaming raw data from a data producer (110);

bundle the raw data into a series of data packages; and

associate with each of the data packages a unique
identifier having a monotonically increasing order
comprising an increasing series of integers without
gaps, based on upload from the data producer (110);
a computer-implemented transformer (530) configured to
receive the data packages having the associated unique
identifiers and generate loadable data structures for a
reporting store associated with a data subscriber;
a computer-implemented loader (550) configured to
receive and store the loadable data structures into a
storage device associated with the data subscriber
based on the monotonically increasing order;
a data channel configured to allow data from the data
producer (110) to be continuously streamed to the data
subscriber through the bundler over a data distribution
network;
a messaging channel configured to provide a current
status of the data being continuously streamed from the
data producer (110) to the data subscriber; and
a control channel separate from the data channel and
configured to allow the data subscriber to request
replay of the data;
wherein the streaming raw data comprises multiple
streams."

Claim 1 of the **fifth auxiliary request** reads as
follows:

"A method comprising:
    receiving, with programmable circuitry, streaming
data from a data producer;
    determining from the streaming data, with the
programmable circuitry, that the streaming data should
be bundled together in accordance with a set of
bundling parameters;

bundling, with the programmable circuitry, the
streaming data into packages of data having a standard
format with a first portion and a second portion,
wherein the first portion includes a unique identifier
of a package of data and a quality indicator generated
by the data producer, and wherein the second portion
includes data;

ordering, with the programmable circuitry, each of
the packages of data using a series of consecutive
integers produced by a master clock;

archiving, with the programmable circuitry, the
packages of data in a memory;

simultaneously to archiving, assigning the
packages of data to parallel data streams, and
publishing at least the first portion of the packages
of data in the parallel data streams;

receiving requests generated by data consumers
through an Application Programming Interface, wherein
the requests include a request for a subscription to a
portion of the streaming data; and

delivering to the data consumers packages of data
corresponding to the subscription."

Reasons for the Decision

1.   The board finds it expedient to start its analysis with
        the present fourth auxiliary request first.

2.   FOURTH AUXILIARY REQUEST

        Claim 1 of the **fourth auxiliary request** comprises the
        following limiting features (outline used in the
        decision under appeal):

F1   A system comprising: a computer-implemented bundler
     configured to: receive streaming raw data from a
     data producer; bundle the raw data into a series of
     data packages; and

F2   associate with each of the data packages a unique
     identifier having a monotonically increasing order
     comprising an increasing series of integers without
     gaps, based on upload from the data producer;

F3   a computer-implemented transformer configured to
     receive the data packages having the associated
     unique identifiers and generate loadable data
     structures for a reporting store associated with a
     data subscriber;

F4   a computer-implemented loader configured to receive
     and store the loadable data structures into a
     storage device associated with the data subscriber
     based on the monotonically increasing order;

F5   a data channel configured to allow data from the
     data producer to be continuously streamed to the
     data subscriber through the bundler over a data
     distribution network;

F6   a messaging channel configured to provide a current
     status of the data being continuously streamed from
     the data producer to the data subscriber; and

F7   a control channel separate from the data channel
     and configured to allow the data subscriber to
     request replay of the data;

F8   wherein the streaming raw data comprises multiple
     streams.

2.1   Claim 1 – inventive step (Article 56 EPC)

Suitable starting point

2.1.1   The inventive-step reasoning in the decision under
        appeal uses **D1** as the starting point. D1 concerns a

system where a "summarised stream" is created using
data originating from individual data streams from
different servers. The streams in D1 are dynamic
collections of data that are subject to change such as
blog postings, updated news events, comment sections of
web sites, social network status updates, chat room
data, user group updates, RSS feed data, and the like.
Streams also can include text, video, photographs,
audio, and other data. In one embodiment, a computer
obtains the summarised stream from a "summarisation
server" over a data network and presents it to the
user.

2.1.2   The appellant submitted that D1 was not an appropriate
starting point for the assessment of inventive step.
The application discussed that, by keeping data in its
raw form, it could be replayed by the user ("data
subscriber") from any point, potentially into new
database solutions. D1, rather than being concerned
with the transmission of streams of data, was concerned
with *summarising* those streams, which was not, in the
words of T 606/89 (cited also in the Guidelines for
Examination), a *similar* use.

2.1.3   This argument is not persuasive, for the following
reasons:

First, the board adheres to the view that, if inventive
step is to be denied, the choice of the starting point
for the assessment of inventive step requires no
specific justification since the claimed subject-matter
must be inventive over any state of the art according
to Article 56 EPC (see e.g. T 967/97, Catchword II,
also cited in the Guidelines for Examination; T 694/15,
Reasons 13; T 816/16, Reasons 3.7.1; T 261/19,
Reasons 2.5). Hence, a document which serves a

different purpose as the present invention may also be
selected as a suitable starting point (see e.g.
T 1294/16, Reasons 5; see also T 2101/12, Reasons 6.3,
using even a *non-technical* disclosure as a suitable
starting point). While it has to be ensured that the
objective technical problem is a realistic one and does
not contain pointers towards the claimed solution, the
application of the problem-solution approach to such a
starting point may still convincingly lead to the
conclusion that the claimed subject-matter is obvious.
In any case, the more technically remote a prior-art
document is from the claimed invention, the easier it
usually becomes for an applicant or patent proprietor
to demonstrate that the notional person skilled in the
art under Article 56 EPC would have never come up with
the claimed solution. Therefore, the selection of a
piece of prior art directed to an arguably *different*
purpose does not prejudice the legitimate interests of
an applicant or a patent proprietor.

Second, the board *does* consider **D1** to be directed to a
similar purpose as the claimed invention. The claim
generally refers to "streaming raw data", which is not
limited to the databases mentioned in the description
and encompasses the streams of D1. Furthermore, the
claimed "bundling" operation does not exclude *further*
processing of the raw data, such as the "summarisation"
of D1. In this respect, attention is drawn to the fact
that the replay operation in the present application
likewise requires a transformation of the data packages
into a requested "loadable format", according to
paragraph [075] of the application as published.

Hence, the board sees no reason to disqualify prior-art
document D1 as a suitable starting point for an
inventive-step reasoning.

Distinguishing features

2.1.4   Using the wording of claim 1, **D1** discloses:

F1   A system comprising: a computer-implemented bundler
     (Fig. 1: "SUMMARIZATION SERVER") configured to:
     receive streaming raw data (Fig. 1: "STREAM 104")
     from a data producer (Fig. 1: "SERVER 102A",
     "SEARCH SERVER 102B"); bundle the raw data into a
     series of data packages (Fig. 1: "SUMMARIZED
     STREAM 112"); and

F2   ~~associate with each of the data packages a unique~~
     ~~identifier having a monotonically increasing order~~
     ~~comprising an increasing series of integers without~~
     ~~gaps, based on upload from the data producer;~~

F3   a computer-implemented transformer configured to
     receive the data packages ~~having the associated~~
     ~~unique identifiers~~ and generate loadable data
     structures for a reporting store (see [0093], last
     sentence: "... hosting the data from the summarized
     stream 112 to allow a remote system or user to
     access the data ...") associated with a data
     subscriber (Fig. 1: "COMPUTER 114");

F4   a computer-implemented loader configured to receive
     and store the loadable data structures into a
     storage device associated with the data subscriber
     (see [0030], second sentence: "... the computer 114
     is configured to access the summarization server
     102C, obtain the summarized stream 112 via the
     network 106 ...") ~~based on the monotonically~~
     ~~increasing order~~;

F5   a data channel (see [0021]: "posted data")
     configured to allow data from the data producer to
     be continuously streamed to the data subscriber
     through the bundler over a data distribution
     network (Fig. 1: "NETWORK 106");

F6   a messaging channel (see [0021]: "metadata")
     configured to provide a current status of the data
     being continuously streamed from the data producer
     to the data subscriber;

F7   ~~a control channel separate from the data channel
     and configured to allow the data subscriber to
     request replay of the data;~~

F8   wherein the streaming raw data comprises multiple
     streams ([0026], [0032]: "streams 104").

2.1.5   Thus, in agreement with point 1.1.2 of the decision
        under appeal, the subject-matter of claim 1 differs
        from the disclosure of D1 in that:

U1   the bundler is configured to associate with each of
     the data packages a unique identifier having a
     monotonically increasing order comprising an
     increasing series of integers without gaps, based
     on upload from the data producer;

U2   the system further comprises a control channel
     separate from the data channel and configured to
     allow the data subscriber to request replay of the
     data.

2.1.6   These differences have not been disputed by the
        appellant.

Technical effect and objective technical problem

2.1.7   The technical effects associated with differences U1
        and U2 are that they allow the data subscriber to
        replay the data packages in the correct order, to
        detect missing data packages, and, if need be, to
        obtain retransmissions of the missing data packages

(see also paragraph [0039] of the application as
published).

The board follows, in the appellant's favour, the
objective technical problem framed by the appellant at
the oral proceedings before the board as "ensuring a
complete replay of data by the data subscriber". The
skilled person to be tasked with that problem is
consequently a person versed in the field of data
communications.

Determination of obviousness (could-would approach)

2.1.8   The subject-matter of claim 1 does not involve an
        inventive step (Article 56 EPC) starting out from **D1**
        for the following reasons:

        The use of "unique identifiers" in the form of a
        "monotonically increasing series of integers without
        gaps" constitutes a straightforward measure for the
        person skilled in the field of packet-based data
        communications, e.g. the sequence number field
        appearing in packets according to the
        Real-Time-Protocol (RTP). The use of a separate
        "control channel" for requesting retransmission of data
        packages identified by such integers is also well-known
        in packet-based data communication, e.g. the RTP
        Control Protocol (RTCP) implements a separate feedback
        channel for a stream transmitted with the RTP protocol
        and may be used for retransmission requests of RTP
        packets.

        In D1, according to paragraph [0030], the computer 114
        (i.e. the "data subscriber") is configured to access
        the summarisation server 102C (i.e. the "bundler"),
        obtain the summarised stream 112 via the network 106,

and <u>present</u> the summarised stream 112 to a user. When
network 106 is a packet-based data network, such as the
Internet, it would have been plausible to consider the
out-of-order arrival and loss of packets containing
parts of the summarised stream 112. In such case, the
skilled person using no more than customary skills
would have applied the well-known techniques mentioned
above, arriving thereby at the introduction of features
U1 an U2 into the system of D1 in a straightforward
manner.

2.1.9   The appellant submitted that even considering that the
         skilled person were to start with D1, there was no
         reason to require "replay" in the system of D1, which
         was directed to providing a summary of a stream. The
         summarised stream of D1 was not distributed over
         databases; there was no need for a particularly
         reliable playback of that stream. In D1, there was no
         discussion or appreciation of the objective problem and
         no teaching to go towards the invention starting
         therefrom, which should be rather considered a "problem
         invention".

2.1.10   This is not convincing.

         First, the board recalls that the closest prior art
         does not have to disclose the "objective technical
         problem", which is only determined in the *second* step
         of the problem-solution approach on the basis of the
         technical effect(s) provided by those features which
         distinguish the claimed invention from that prior art
         (see e.g. T 698/10, Reasons 3.4; T 910/90; Reasons 5.1,
         last sentence).

         Second, the fact that the stream presented by
         computer 114 of D1 is a summarised stream does not mean

that data integrity of the summarised stream can be
dispensed with. Nor does "bundling" as claimed
necessarily exclude a reduction of the amount of
information being combined, as indicated in point 2.1.3
above. As to the meaning of "replay", the claims are
not limited to (re-)population of databases. Actually,
the word "database" is never mentioned in the claims.
Furthermore, the computer 114 obtains the summarised
stream 112 from the summarisation server 102C, which
necessarily implies a (re-)play of the data hosted at
that summarisation server 102C. According to
paragraphs [0004] and [0020], the data can include
text, video, photographs, audio, and other data, which
does not rule out (re-)population of databases.

Third, regardless of the question whether a "problem
invention" is compatible with the assessment of
inventive step according to the problem-solution
approach or to which extent it may generally justify
the presence of an inventive step, the objective
problem formulated above is typically apparent in
packet-based data networks, where the underlying data
packets may be sent over different data paths. This is
known to inherently involve the risk of data packets
being lost or arriving out of order. With these
considerations in mind, the skilled person would have
deemed the objective technical problem likely to arise
in the data network 106 of D1 as well, without any need
to have it explicitly mentioned in the same document.
In conclusion, the recognition of that problem would
have been obvious to the skilled person in the field of
telecommunications and therefore cannot be a "problem
invention" within the meaning of T 2/83.

2.2   It follows that the **fourth auxiliary request** is not
        allowable under Article 56 EPC.

3.   MAIN AND FIRST TO THIRD AUXILIARY REQUESTS

3.1   Claim 1 - inventive step (Article 56 EPC)

3.1.1   The features of claim 1 of the main request and of each
        of the first to third auxiliary requests are
        essentially a subset of the features of claim 1 of the
        fourth auxiliary request.

3.1.2   Hence, the reasoning set out above applies *mutatis
        mutandis* to the subject-matter of claim 1 of the main
        request and of each of the first to third auxiliary
        requests. As a consequence, the subject-matter of
        claim 1 of those claim requests does not involve an
        inventive step starting out from **D1** either.

3.2   Accordingly, the **main request** and the **first to third
        auxiliary requests** are likewise not allowable under
        Article 56 EPC.

4.   FIFTH AUXILIARY REQUEST

        Claim 1 of the **fifth auxiliary request** comprises the
        following limiting features (board's outline):

        A method comprising:
        V1 receiving, with programmable circuitry, streaming
            data from a data producer;
        V2 determining from the streaming data, with the
            programmable circuitry, that the streaming data
            should be bundled together in accordance with a set
            of bundling parameters;

V3   bundling, with the programmable circuitry, the
     streaming data into packages of data having a
     standard format with a first portion and a second
     portion, wherein the first portion includes a
     unique identifier of a package of data and a
     quality indicator generated by the data producer,
     and wherein the second portion includes data;

V4   ordering, with the programmable circuitry, each of
     the packages of data using a series of consecutive
     integers produced by a master clock;

V5   archiving, with the programmable circuitry, the
     packages of data in a memory;

V6   simultaneously to archiving, assigning the packages
     of data to parallel data streams, and publishing at
     least the first portion of the packages of data in
     the parallel data streams;

V7   receiving requests generated by data consumers
     through an Application Programming Interface,
     wherein the requests include a request for a
     subscription to a portion of the streaming data;
     and

V8   delivering to the data consumers packages of data
     corresponding to the subscription.

4.1   Admittance (Article 12(4) RPBA 2007)

4.1.1   Claims 1 and 13 of the fifth auxiliary request
        allegedly have their basis in original claims 1, 5, 9
        and 12 and paragraphs [006], especially fourth and
        penultimate sentences, [037], [042] and [043] of the
        application as published. The appellant submitted that
        the independent claims of this claim request still had
        the "unique identifier" (U1) and a mechanism through
        which a subscriber could obtain a "replay" (U2) (see
        feature V4).

As such, the same reasons as expressed for the other claim requests were equally applicable to the assessment of novelty and inventive step inherent to the claimed invention in this auxiliary request. Furthermore, D1 did not suggest simultaneously archiving and streaming the respective data stream (see **features V5 and V6**). These changes were made in response to the arguments put forward by the examining division in the first-instance oral proceedings.

4.1.2   In accordance with Article 12(4) RPBA 2007, the board has the power to hold inadmissible requests which could have been presented in the first-instance proceedings.

4.1.3   The appellant's case on novelty and inventive step presented in the statement of grounds of appeal concerning the fifth auxiliary request is based not only on differences U1 and U2, but also on the presence of additional **features V4 to V8**, which were <u>not</u> considered in the decision under appeal <u>at all</u>. Consequently, this claim request indeed constitutes a "fresh case" which would require examination from the ground up and possibly the assessment of inventive step using documents other than D1 as starting point. This, however, is not the purpose of appeal proceedings.

Moreover, this claim request could **and should** have been presented in the first-instance proceedings, e.g. as a reaction to the deficiencies pointed out by the examining division. The fact that those deficiencies were indicated during the first-instance oral proceedings should have prompted the appellant to react directly and immediately before the examining division, even if such reaction would have required an extension or a postponement of those oral proceedings.

4.2   Consequently, the board did not admit the **fifth auxiliary request** into the appeal proceedings (Article 12(4) RPBA 2007).

5.   Since there is no allowable claim request, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

B. Brückner   K. Bengi-Akyürek

Decision electronically authenticated