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 Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

Ciudad.-

Solicitud de Patente

Le solicito ordenar la publicación del extracto.

GERMAN CASTILLO GRAU

T.P. 2978

Castillo Grau & Associates

LAW OFFICES
P.O. BOX 251473
BOGOTA, COLOMBIA

Expediente No. 2000 - 9.240

Solicitud de Patente

Contiene arte final por triplicado

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PATENT- OCH REGISTRERINGSVERKET

Patentavdelningen

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Intyg Certificate

Härmed intygas att bifogade kopior överensstämmer med de handlingar som ursprungligen ingivits till Patent- och registreringsverket i nedannämnda ansökan.

This is to certify that the annexed is a true copy of the documents as originally filed with the Patent- and Registration Office in connection with the following patent application.

(71) Sökande Telefonaktiebolaget L M Ericsson, Stockholm SE
Applicant (s)

(21) Patentansökningsnummer 9900457-4
Patent application number

(86) Ingivningsdatum 1999-02-10
Date of filing

Stockholm, 2000-02-17

För Patent- och registreringsverket
For the Patent- and Registration Office

Anita Södervall
Anita Södervall

Avgift
Fee 170:-

Ink. t. Patent- och reg.verket¹

1999 -02- 10

Huvudfaxen Kassan

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Telefonaktiebolaget LM Ericsson

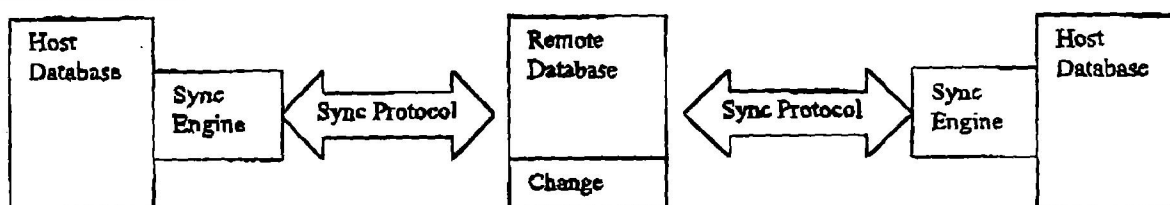
A METHOD OF SYNCHRONIZING A HOST DATABASE AND A REMOTE
DATABASE

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Technical Field

The present invention relates to a method of synchronizing a host database and a remote database.

BACKGROUND



Terminology

This is the terminology used in this invention disclosure.

Database	A database in this document is thought to be for example the phone book or a calendar but it may contain something else as well.
Host	The device that keeps the Host Database and the Sync Engine.
Host Database	The Sync Engine tries to keep this database synchronized with the Remote Database.
Remote Database	The Sync Engine tries to keep this database synchronized with the Host Database.
Item	An item in this document is a record in a database.
Synchronisation	A process where two databases are made to contain the same information. Changes made to one database should be made to the other.
Sync	Short for synchronisation.
Semi-slow sync	The Sync Engine reads all the items from the Remote Device and matches them with the items in the Host Database. Items that cannot be matched will be added to the Remote Device or the Host Database.
Sync Engine	Software that does the synchronisation.
Change Log	Log where changes to the Remote Database are stored. The change log may be of a fixed size; old changes are pushed out of the change log as new ones are added. This is called a fifo (first

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in first out) log.

Each entry in the change log has an event (add, delete or modify), the UID for the database entry affected and a change counter value.

The change log can be retrieved by the Sync Engine based on a change counter. This makes it possible for the Sync Engine to retrieve only the changes it is interested in.

The Change Log is thought of as full if it is not possible for the remote device to produce a valid Change Log for the requested Change Counter.

The Change Log is often referred to as the Regular Change Log in this document.

Fast sync

If the change log contains all changes since the last sync only those entries in the database affected needs to be compared and transferred between the device and the sync engine, this speed up the synchronisation process significantly. If this is possible this is called a fast sync.

Change Counter

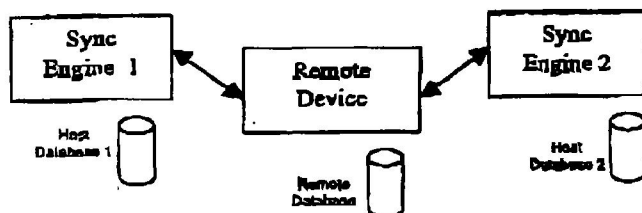
A counter that is increased for each change (add, modify and delete) to the database. The change counter is stored in the log and saved in the sync engine after sync.

Problem

There are two situations when a Sync Engine deletes items from the Remote Database:

1. The Sync Engine deletes items from the Remote Database to make room for other items. For example, this might be done to keep a sliding window for a calendar.
2. When items are deleted from the Host Database the Sync Engine deletes these items from the Remote Database.

In the following example the Remote Database is synchronized with two Host Databases.



1. Sync Engine 1 starts a synchronization with the Remote Device.
2. Sync engine 1 deletes an item from the Remote Database to make room for other items.
3. Since an item was deleted from the Remote Database the Remote Device makes an delete-entry in its Change Log for the deleted item.
4. Sync Engine 1 finishes the synchronization.
5. Sync Engine 2 starts a synchronization with the Remote Device.
6. Sync Engine 2 looks at the Change Log in the Remote Device and sees that an item has been deleted.
7. Sync Engine 2 deletes this item from Host Database 2.
8. Sync Engine 2 finishes the synchronization.

In step 7, the item should not have been deleted from Host Database 2 since Sync Engine 1 only deleted it from the Remote Device to make room for other items.

There is a risk of items accidentally being deleted from a Host Database when synchronizing a Remote Device with more than one Host.

SOLUTION

The problem described above can be solved by:

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- Introducing the notion of soft deletes and hard deletes.
- Introducing two commands, one for soft deletes and one for hard deletes.
- Introducing a Hard-delete Log to keep track of items that have been hard deleted.
- Combining the Regular Change Log and the Hard-delete Log into a Combined Change Log in an appropriate way when the Sync Engine request the Change Log.

Soft delete, is used by the sync engine to delete items in the remote device to make room for other items.

Hard delete, is used by the sync engine to delete items from the Remote Device that have been deleted from the Host Database. Hard deletes will propagate as hard deletes to other Hosts that the Remote Device may be Synchronized with.

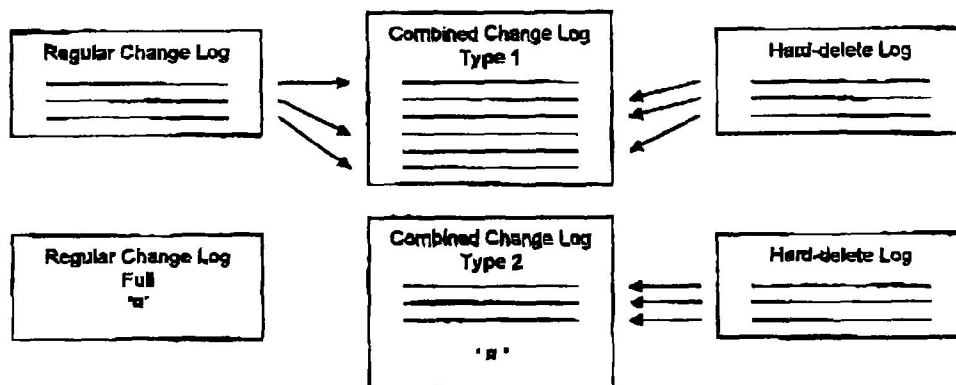
The Sync Engine shall use two different commands when performing Hard Deletes and Soft Deletes to the remote Database.

A separate log, Hard-delete log, must exist to keep track of items that have been hard deleted. This log could be of fixed size or dynamic. The newest entry should be at the top of the log. If the log flows over the oldest item in the log should be discarded. Each entry in the delete log should have the same attributes as entries in the Regular Change Log; an event (always hard delete), the UID for the deleted database entry and a change counter value.

When the Remote Device receives a soft delete command it should make an entry in the regular change log. When the Remote Device receives a hard delete command it should make an entry in the hard-delete log.

It is possible for the Sync Engine to retrieve the Change Log from the Remote Device. This Change Log will be a Combined Change Log including entries from the Regular Change Log and the Hard-delete Log.

There will be two types of combined change logs:



Combined Change Log, Type 1 includes entries from both the Regular Change Log and the Hard-delete Log. The entries should be listed with the newest entries at the top of the log.

Combined Change Log, Type 2 includes entries from the Hard-delete Log and a 'x' indicating that the Regular Change Log is full. The entries from the Hard-delete log should be listed with the newest entries at the top of the log.

The two types of combined change logs should be used according to the following table:

Regular Change Log	Hard-delete Log	Combined Change Log
Not full	Not full	Type 1
Not full	Full	Type 2
Full	Not full	Type 2
Full	Full	Type 2

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Note that even if the Hard-delete Log is full a 'm' is not returned. Instead as many entries as possible from the Hard-delete Log are returned. This is to ensure that as many hard deletes as possible are handled by the Sync Engine.

The Sync Engine handle the two types of Combined Change Logs differently:

- Type 1, the Sync Engine should handle the entries in the Combined Change Log in a normal way.
- Type 2, the Sync Engine should handle the entries in the Combined Change Log in a normal way and then move to perform a semi-slow sync.

MERITS OF THE INVENTION

The invention eliminates the risk of items accidentally being deleted when synchronizing a Remote Device with more than one Host.

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CLAIMS

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1. A method of synchronizing a host database and a remote database, characterized by
- 5 providing a first delete command for deleting items stored in the remote database, when said remote database is full,
- providing a second delete command for deleting such items from the remote database, which have been deleted
- 10 from the host database,
- maintaining a first log file for keeping track of items, which are related to said first delete command, and
- maintaining a second log file for keeping track of items, which are related to said second delete command.

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ABSTRACT

A method of synchronizing a host database and a remote database provides a first delete command for deleting items stored in the remote database, when said remote database is full, and a second delete command for deleting such items from the remote database, which have been deleted from the host database. A first log file is maintained for keeping track of items, which are related to said first delete command, and a second log file is maintained for keeping track of items, which are related to said second delete command.

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CERTIFICADO

La presente certifica que la adjunta es una copia verdadera del documento tal como fue radicado originalmente ante la Oficina de Registro y Patentes relacionada con la siguiente solicitud de patente:

(71) Solicitante: Telefonaktiebolaget L M ERICSSON, Stockholm SE

(21) Número de solicitud de Patente: 99000457-4

(86) Fecha de radicación: 1999-02-10

Estocolmo: 2000-02-17

Por la Oficina de Registro y Patentes

(FIRMA) ANITA SÖDERVALL

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METODO DE SINCRONIZACION DE UNA BASE DE DATOS CENTRAL Y UNA
BASE DE DATOS REMOTA

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REIVINDICACIONES

1. Un método de sincronización de una base de datos central y una base de datos remota, **caracterizado** por:

proveer un primer comando de borrado para borrar información almacenada en la base de datos remota, cuando dicha base de datos remota esté llena,

proveer un segundo comando de borrado para borrar dicha información de la base de datos remota que haya sido borrada de la base de datos central,

mantener un primer archivo de registros para hacerle seguimiento a información relacionada con dicho primer comando de borrado, y

mantener un segundo archivo de registros para hacerle seguimiento a información relacionada con dicho segundo comando de borrado.

2do. EXAMEN DE FORMA PATENTE DE INVENCION

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Folio ~~42~~

Radicación no 00-9240

Concepto Técnico no 111

Clasificación Internacional de Patentes G 06 F 13/42

Practicado el examen de acuerdo a lo establecido en el Art. 38 de la Decisión 486 se determinó que esta solicitud de **Patente de Invención**:

- SI [☒] NO [☐] Contiene un resumen de la invención (Art.26-e).
- SI [☒] NO [☐] Contiene el título o nombre de la invención (Art.27-d).
- SI [☒] NO [☐] Contiene la descripción de la invención (Art.26-b).
- SI [☒] NO [☐] NO ES APLICABLE [☐] Contiene los dibujos necesarios para comprender la invención (Art.26-d)
- SI [☒] NO [☐] Contiene una o más reivindicaciones. (Art.26-c).
- SI [☐] NO [☐] NO ES APLICABLE [☒] Han sido desarrollados los productos y/o procedimientos a partir de recursos genéticos o de sus productos derivados de los que cualquiera de los Países Miembros es país de origen. (Art. 26- h).
- SI [☐] NO [☐] NO ES APLICABLE [☒] Los productos y/o procedimientos han sido obtenidos o desarrollados a partir de los conocimientos tradicionales de las comunidades indígenas, afroamericanas, o locales de los países miembros, de acuerdo a lo establecido en la Decisión 391 y sus modificaciones y reglamentaciones vigentes.(Art.26-i).
- SI [☐] NO [☒] La invención se refiere a un producto relativo a un material biológico. (Art.26-J).
- SI [☒] NO [☐] La prioridad coincide con la materia reivindicada.
- SI [☒] NO [☐] **CUMPLE LOS REQUISITOS TÉCNICOS**

OBSERVACIONES Y OTROS: SI [☐] NO [☒] ver hoja(s) anexa(s)

EXAMINADOR TÉCNICO
202027

Bogotá D. C., 20-01-2003

Carrera 13 No. 27-00 Pisos 5, 7 y 10
Conmutador: 382 0840
Fax: 350 5220
E-mail: info@sic.gov.co
www.sic.gov.co
Bogotá, D.C., Colombia

2003-01-7
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Folio ~~48~~

2020
Bogotá DC

Doctor(a)
GERMAN CASTILLO GRAU
Apoderado(a)

REFERENCIA:	Radicación No.	00 9240
	Trámite	002
	Evento	001
	Actuación	416
	Oficio No.	077
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la misma Decisión.

Cúmplase

Dado en Bogotá DC, a los

22 de mayo de 2003


CLARA CASTELLANOS DE JAIMES
Jefe de la División de Nuevas Creaciones (E)

Carrera 13 No. 27-00 Pisos 5, 7 y 10
Conmutador: 382 0840
Fax: 350 5220
E-mail: info@sic.gov.co
www.sic.gov.co
Bogotá, D.C., Colombia

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DIVISION DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 00-009240

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**
FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **528**, DE
FECHA **30 DE MAYO DE 2003**, EL TERMINO HABIL SEÑALADO POR LA LEY
EXPIRA EL **29 DE AGOSTO DE 2003**.

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____ NO _____ **X** _____

Bogotá D.C., Marzo de 2004

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RADICACIÓN: 0-9240

EDICTO No. 4860

LA SECRETARÍA GENERAL AD-HOC HACE SABER:

Que esta Superintendencia profirió **Resolución No. 7150 de 31-MAR-2004**. Que el contenido de la parte resolutive es como sigue: El Superintendente de Industria y Comercio.

RESUELVE

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ARTICULO PRIMERO: Declarar abandonada la solicitud de privilegio de patente de invención contenida en el expediente de la referencia.

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución al doctor Germán Castillo Grau, o a quien haga sus veces, quien actúa como apoderado de Telefonaktiebolaget Lm Ericsson., entregándole copia de la misma, advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE

Dada en Bogotá, D.C., a los **31 MAR. 2004**

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO,


JAIME RUBIO ESCOBAR

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaría General Ad-Hoc **26-ABR-2004**
Secretaría General Ad-Hoc
EDICTO No. 4860

Este edicto se desfija hoy **07-MAY-2004** a las cinco (5:00 p.m.)