



ALCATEL's ONE TOUCH™ 715

SyncML PIM Synchro REFERENCE MANUAL



SW/BF5R1/REFMAN/SYNCML - Document issue 3.0

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1 Introduction

This document provides information on the SYNC ML feature of ALCATEL's ONE TOUCH™ 715 handset. This information includes:

- An introduction to the Man Machine Interface of the ONE TOUCH™ 715,
- An overview of the ONE TOUCH™ 715 SYNC ML features,
- A list of SYNC ML parameters.

1.1 Prerequisites

Full understanding of this document requires some knowledge of the WAP architecture.

1.2 Document layout

This document is organized as follows:

- Section 1: Introduction (scope and layout of the document).
- Section 2: References (documentation, glossary).
- Section 3: General presentation (general information about the ONE TOUCH™ 715).
- Section 4: Functional description (Sync ML features).
- Section 5: MMI mechanism (access to menus, use of softkeys).
- Section 6: Parameters (Sync ML configuration parameters).
- Section 7: Appendices (miscellaneous information (e.g. tables) about Sync ML).
- Section 8: Message strings (error messages).

2 Reference

2.1 Documents

2.1.1 Standard documents

[SYNCML REP]	SyncML Representation Protocol	V1.0b
[SYNCML SYNC]	SyncML Sync Protocol	V1.0

2.1.2 Web links

www.alcatel.com/wap (to download this reference guide and consult other useful documents).

www.syncml.org (to access useful info about Sync ML and its compliance requirements).

2.2 Glossary

2.2.1 Terms and concepts

Browser Session	Starts when the user activates the WAP browser and ends when the user quits it.
Browser Menu	General Menu of the WAP Browser.
Pop-up menu	Menu related to the card currently displayed. Includes card-specific actions.
WAP status bar	Area including information on the current browser session (connection status, etc.).
RSA	Internet encryption and authentication algorithm.

2.2.2 Acronyms

AM	Application Manager
CCITT	Consultative Committee on International Telegraph and Telephone
CSD	Circuit Switched Data
GSM	Global System for Mobile communications
ISDN	Integrated Services Digital Network
MMI	Man-Machine Interface
MSISDN	Mobile Station ISDN number
OTAP	Over the Air Provisioning
PIM	Personal Information Manager
RAS	Remote Access Server
SIM	Subscriber Identity Module
SMS	Short Message Service
SMSC	SMS Center
SYNC ML	Synchronization Markup Language
TTL	Time To Live
UDI	Unrestricted Digital Information (digital access mode)
UI	User Interface
UP	Unwired Planet
URL	Uniform Resource Locator
WAP	Wireless Application Protocol
WBMP	Wireless Bitmap
WBXML	WAP Binary XML
WCOMP	Wireless Control Message Protocol
WSP	Wireless Session Protocol
WTA	Wireless Telephony Application
WTAI	WTA Interface
WTP	Wireless Transaction Protocol
WTLS	Wireless Transport Layer Security
WML	Wireless Markup Language
WML Script	Wireless Markup Language Script
WWW	World Wide Web
XML	eXtensible Markup Language

3 General Presentation

3.1 Man Machine Interface (MMI)

In addition to the CCITT keypad, the Mobile Equipment (ME) includes dedicated keys as well as a navigation/validation key.

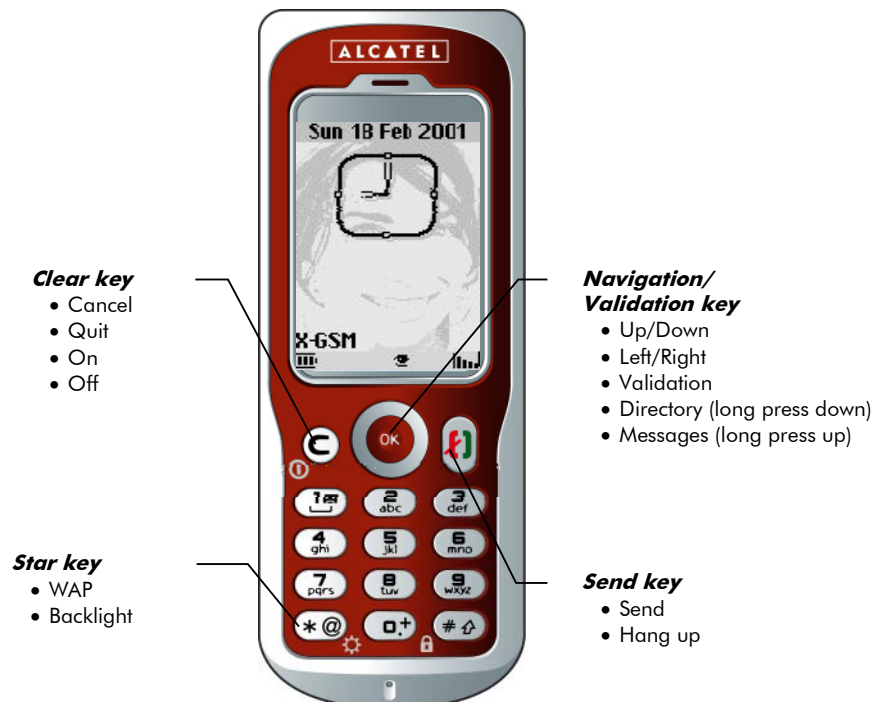
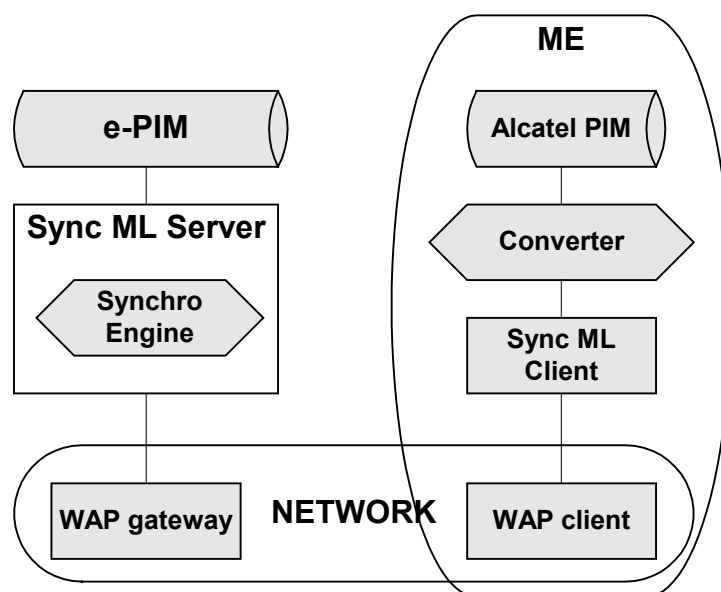


Figure 1: The dedicated keys of the MMI

3.2 Synchronization model overview

The model below represents the relationships between the client and the server during the synchronization process.



4 Functional description

4.1 Overview

4.1.1 PIM concept

PIM means Personal Information Manager. It is a small set of specialized databases and their dedicated management functions. Each of these databases can handle only a single kind of record. The name of the database therefore corresponds to the type of record.

The databases supported by ALCATEL PIM are:

- **Contact:** dedicated to the storage of business card information.
- **Todo:** dedicated to the storage and notification of action events.
- **Appointment:** dedicated to the storage and notification of appointment events.

4.1.2 SyncML and Synchronization

SyncML is a high level protocol based on the XML language, which defines a standard mean to exchange data objects and related information between a local and a distant database, in order to synchronize their content.

The synchronization process is scheduled by a synchronization engine hosted on the server side. The synchronization session involves the following steps:

1. Initiate the synchronization process.
2. Read content differences between databases.
3. Update each database in order to synchronize them.

Data objects that may be exchanged in SyncML 1.0 are vCard and vCalendar objects.

4.1.3 vCard and vCalendar standards

Personal Data Interchange (PDI) occurs every time two or more individuals communicate, in either a business or personal context, face-to-face or across space and time. Such interchanges frequently include the exchange of personal information, such as business cards, telephone numbers, addresses, dates and times of appointments.

VCard and vCalendar formats are open standards designed to support the natural complexity and diversity of personal data interchanges (PDI). They are defined in a platform neutral data encoding.

They were created by the VERSIT consortium and are supported by the Internet Mail Consortium since December 1996.

4.1.3.1 vCard

This format is dedicated to electronic business card encoding. It is used to encode Contact objects.

4.1.3.2 vCalendar

This format is dedicated to electronic calendaring and scheduling encoding. It is used to perform encoding of Todo and Appointments PIM objects.

4.1.4 PIM synchronization

PIM synchronization allows SyncML synchronization between the PIM database of the handset and a distant server database.

4.2 Types of synchronization

The ONE TOUCH 715 provides three different synchronization modes to the end user:

- Full synchronization (slow two way sync).
- Fast synchronization (two way sync).
- Refresh synchronization (refresh sync from server).

4.2.1 Full Synchronization (Slow two way sync)

In full synchronization, changes are tracked by analyzing all records of both device and server databases before sending database update requests.

4.2.2 Fast Synchronization (Two way sync)

In fast synchronization, changes are not recovered by analyzing the whole database. More simply, all changes made since the last successful synchronization are stored in a "change log" file, which is maintained by the PIM. But Fast Synchronization is not always possible: it is sometimes necessary to perform a full synchronization in order to keep database consistency.

4.2.3 Refresh Synchronization (Refresh sync from server)

It is a uniform way to download a complete PIM database from the server to the device. All PIM items in the current database are cleared and the database is updated with the whole content of the server database. Note that, as in other synchronization types, records identifiers are not necessarily the same in local and distant databases (a mapping is supported by server).

4.2.3.1 Fallback conditions

Fast synchronization is not always possible, in such cases as:

- if the last synchronization was performed with a different server.
- if the last synchronization has failed or was aborted.
- if an overflow is detected during change log generation.

In the above cases, fast synchronization is automatically replaced by full synchronization.

4.2.4 Local synchronization impact

Local and distant synchronization can NOT be activated simultaneously. There is therefore NO interaction between them. However, note that:

- when a local synchronization has been performed *before* a distant synchro, the distant synchro will be a **slow** two way sync (see next section).
- when a distant synchronization has been performed *before* a local synchro, the local synchro will be a **slow** two way sync (see next section).

4.3 Data object Mapping

4.3.1 Mapping of local record ID to distant record ID

Mapping of the local database record identifier to the distant database identifier is performed on the server side. Hence, each time a new record is created on the local database, the server retrieves the new local record identifier (LUID) and maintains the mapping between local values and the corresponding record identifier stored on the distant database.

4.3.2 Mapping of database records to transport objects

PIM records are mapped on vCard and vCalendar in order to be exchanged through SyncML protocol. This mapping is described in paragraph 8.3.

4.4 Additional related services

A back office interface shall be supplied to the user in order for him to initialize and configure the synchronization service. These aspects are out of the scope of the terminal and are described in the sections below.

4.4.1 End user subscription

Before synchronizing, the user has to subscribe to a service provider. The following points shall be defined after the subscription to the synchronization service:

Server access: it is composed of an URL and any necessary login information.

Database access: the user must subscribe an account to a distant related database for each local PIM database. This subscription defines the identifier of the distant database and related login information. Note that this login information is sensitive and its secrecy is the first condition for synchronization security.

The communication means provided to the user to perform the subscription may include internet, mail, e-mail, phone or SMS. The only condition is that the chosen mean must ensure confidentiality.

4.4.2 Synchronization Engine Management

Synchronization is driven by a synchronization engine. The Synchronization Engine is a software application running on a server. This application is the core of the synchronization process and is responsible for:

- Analyzing changes since the last synchronization.
- Schedule updating operations.

The analysis of changes may reveal the existence of conflicts. For example, a record was modified on both the client and the server sides.

SyncML does not provide any mean to support the resolution of synchronization conflicts by the end user. A set of rules should therefore be configured to define fold back conditions in case of conflicts. The configuration of the synchronization engine is no longer in the scope of the SyncML protocol: no configuration-related information will be exchanged with the terminal. An dedicated internet interface should therefore be provided to configure the Synchronization Engine, particularly in the domain of conflict resolution.

4.5 Security

Security is an important aspect of synchronization. Information transmitted in a business context are often very sensitive.

4.5.1 User authentication in SyncML connections

There are two different levels of user authentication:

- **Server authentication:** restricts access to the synchronization's main access point. This authentication level is optional.
- **Database authentication:** guarantees the user that no one will access the database without the password. This level of authentication is mandatory.

4.5.2 WAP security

Refer to the WAP reference manual.

4.6 Voice calls Management

4.6.1 Incoming call behavior

It is not possible to handle synchronization *and* voice calls at the same time. When the user accepts an incoming call during a synchronization session, the synchronization is aborted. Note that when a synchronization is aborted, the next synchronization will be performed in slow mode (on the same database(s)). When the user rejects the incoming call, the synchronization goes on.

4.6.2 Outgoing call behavior

It is not possible to perform outgoing calls during a synchronization session.

4.6.3 Established call behavior

It is not possible to start a synchronization during an established call.

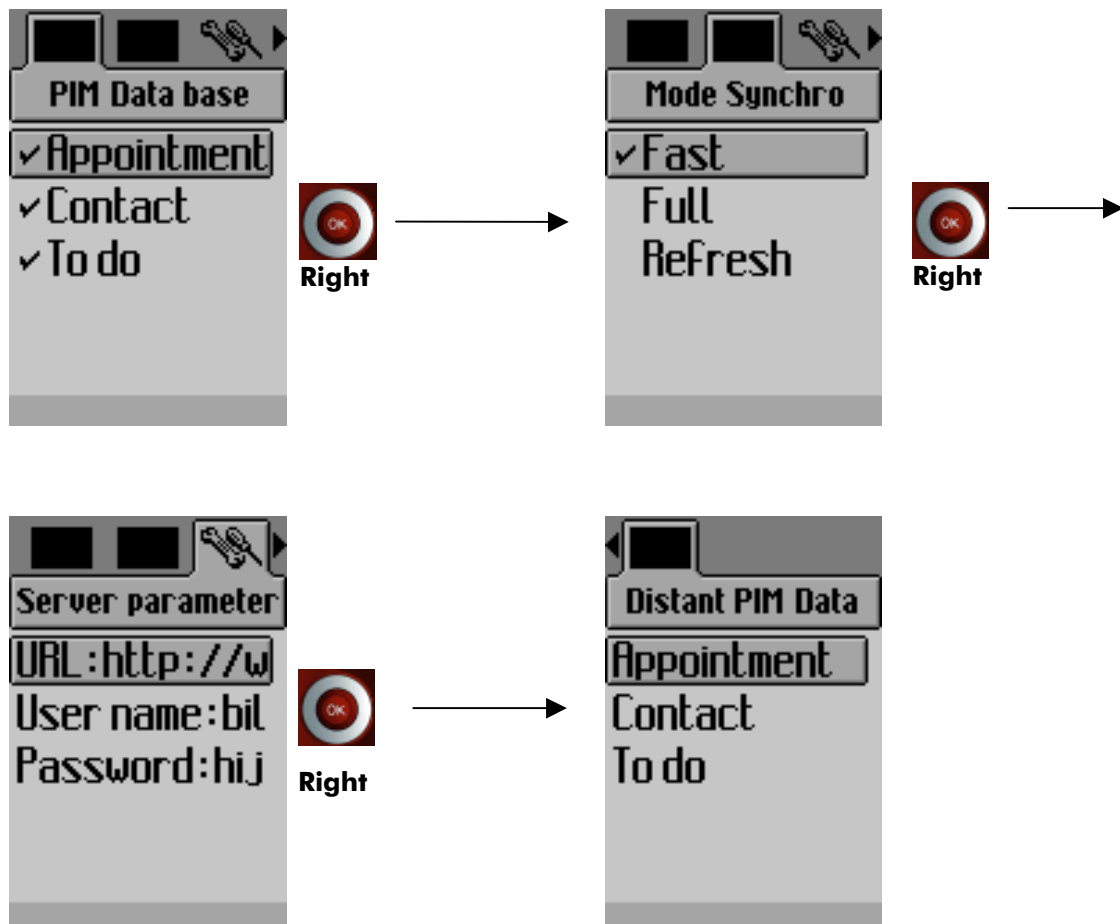
5 MMI Mechanism

Use the handset's MMI to configure the Synchronization startup (out of browser environment). Note that synchronization is supported by the browser: during a synchronization, the browser is activated and the MMI is no longer accessible (until the end of session). The user can however use the **Cancel** key to cancel the synchronization and return to the idle screen.

Note: When the synchronization is launched **from the handset's** dedicated menu, then "synchro successful", "synchro failed" and "synchro cancelled" decks are *Alcatel* decks. When the synchronization is launched **from a WML card** while browsing, then these decks are *Openwave* decks.

5.1 Synchronization menu

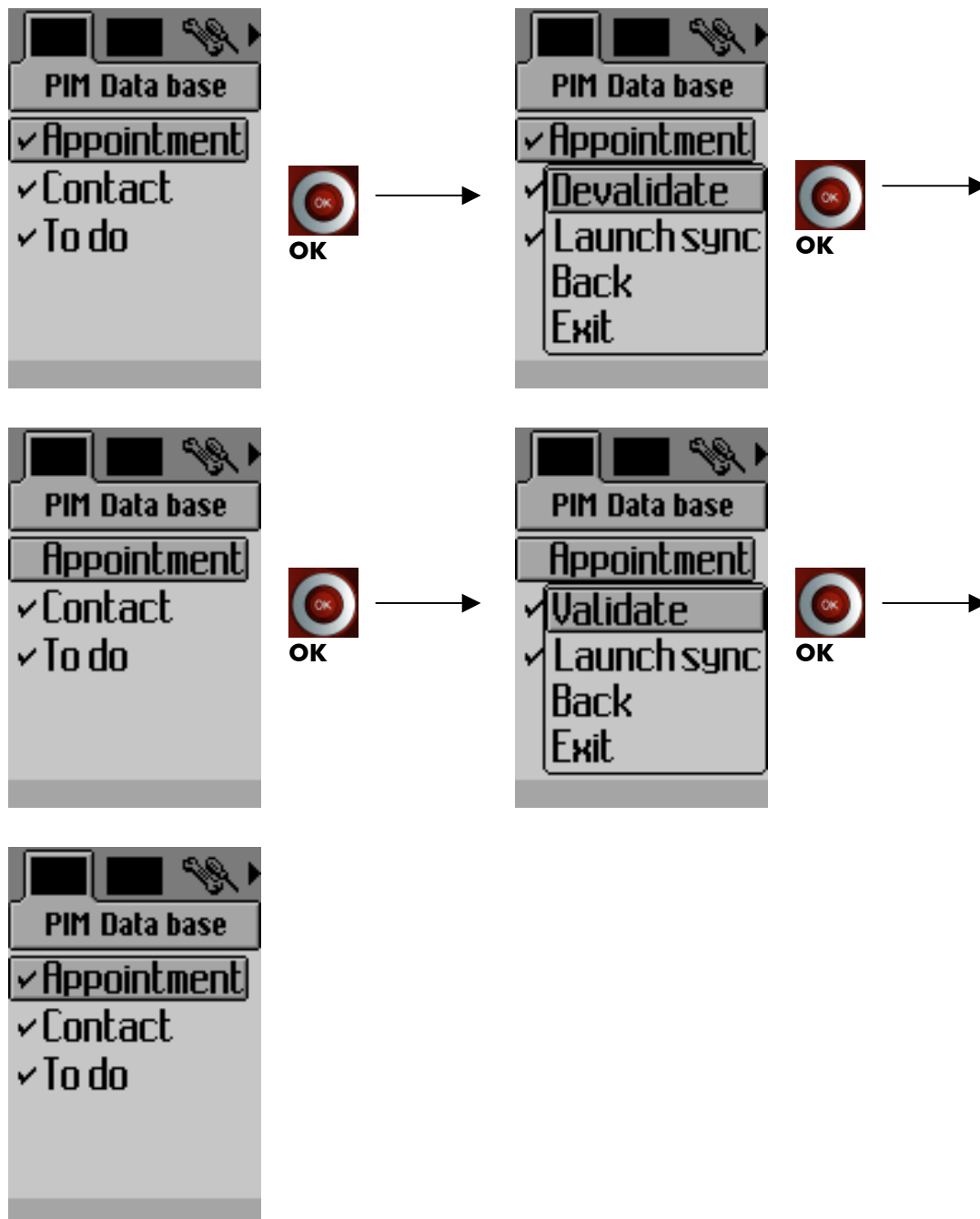
The Synchronization high-level menus are presented below. They support main aspects of PIM synchronization (choice of PIM database, synchronization mode, server parameters and PIM data). Use the OK key (press right) to display menus.



5.2 Selection of the database

Each PIM database (appointment, contact, to do, etc.) can be selected or deselected (using the Validate/devalidate options in the menu). Validating a database means that it will be updated during the next synchronization. Devalidating the database means it will NOT be synchronized...

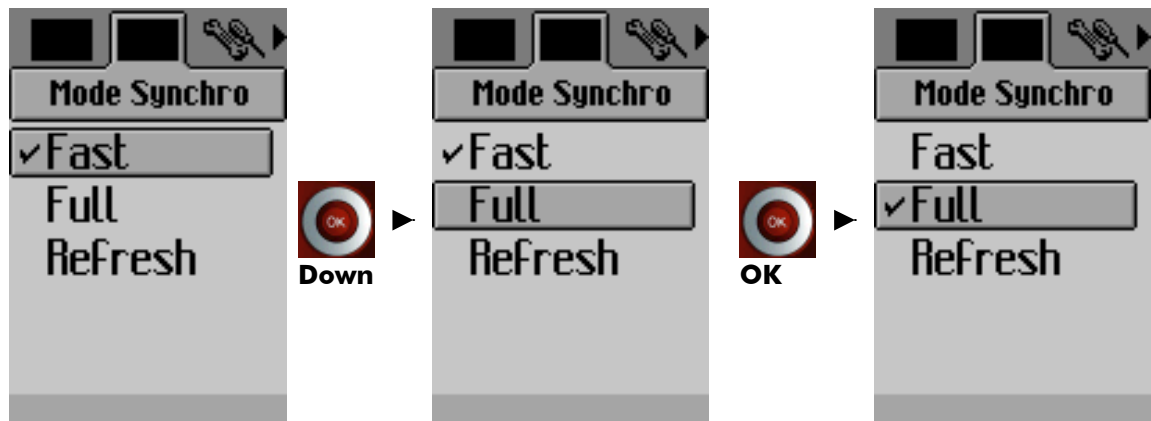
Once the required databases have been selected, use the **Launch sync** item to start the synchronization.



5.3 Selection of the synchronization mode

Three levels of synchronization can be selected (see section 4.2 for details on sync types):

- **Fast** to update only the last modified data (two-way sync).
- **Full** to compare the entire databases before making modifications (slow two-way sync).
- **Refresh** to replace the handset's databases with the server's contents (refresh from server).



5.4 Modification of the Server parameters

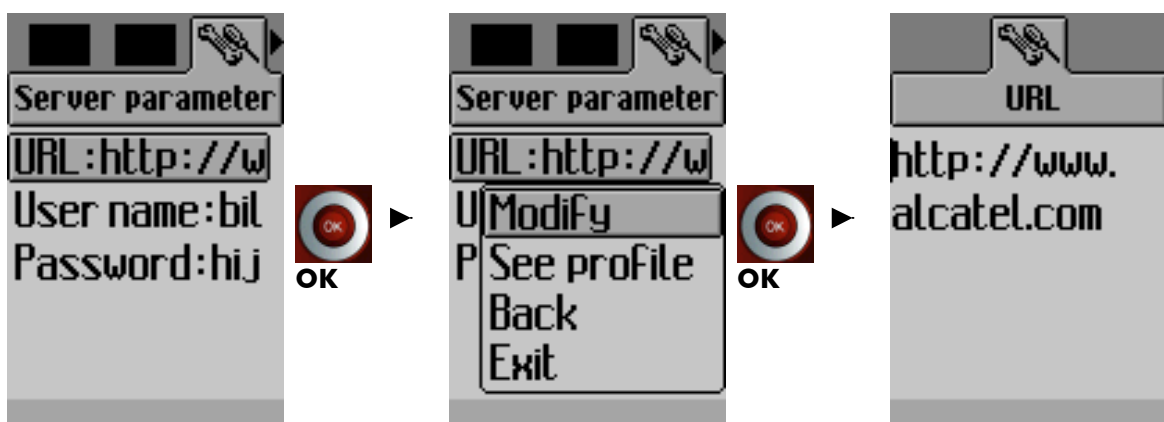
The server parameters include:

- URL (of the server)
- User name (for login to the server)
- Password (login-related password)

Parameters are subject to customization ("Modify" item of the contextual menu).

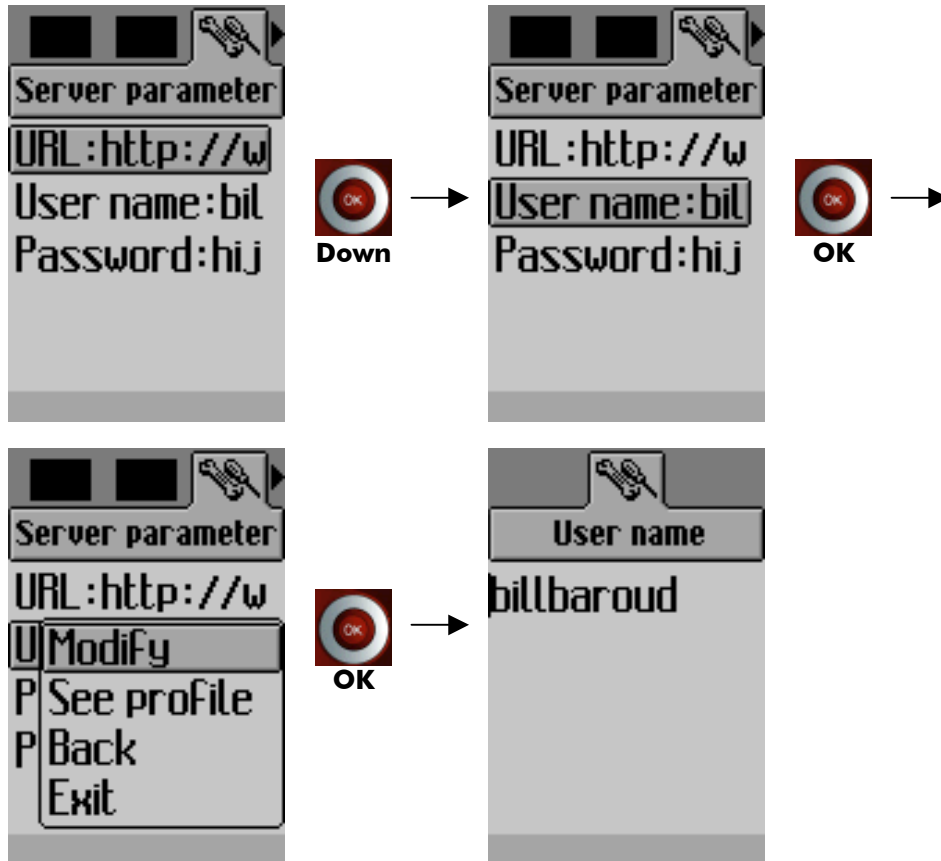
5.4.1 Modification of the server's URL

Use the **Modify** item to modify the server's address. A **See profile** item enables the user to consult the entire profile (but not to modify it).



5.4.2 Modification of the user name

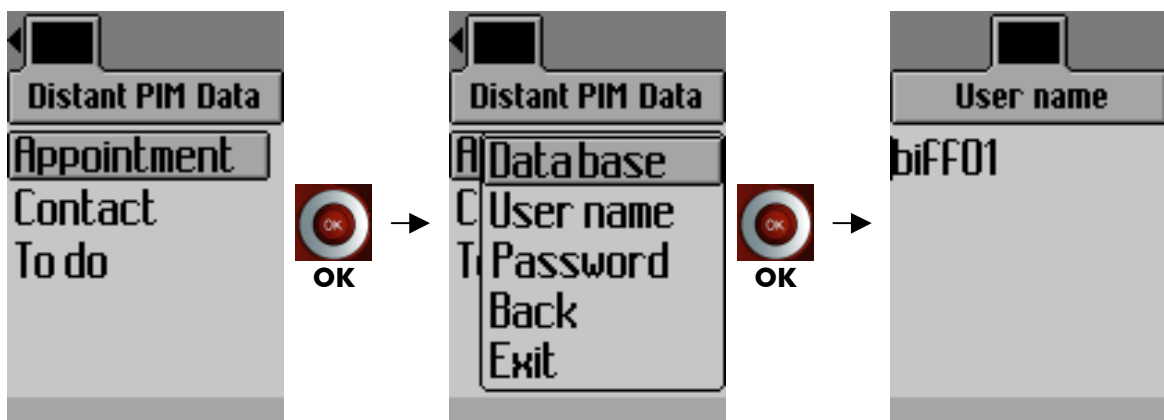
It is also possible to modify the user name (and password), as illustrated below:



5.5 Modification of the distant PIM database parameters

For each distant database, the following parameters can be defined:

- Database (name of the distant database).
- User name (user name for login on the distant database).
- Password (login related password).

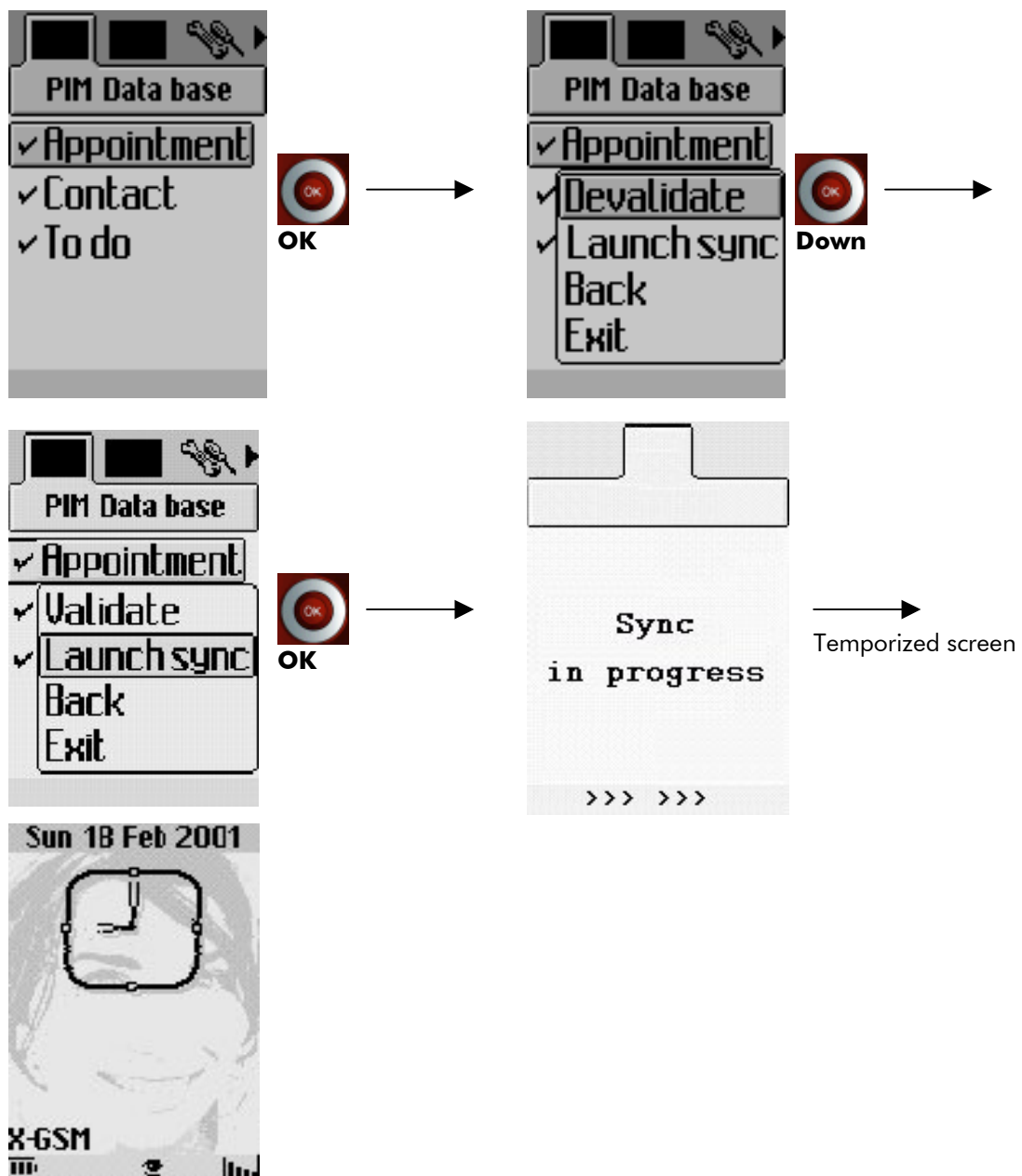


5.6 Synchronization of the database

The **Launch Sync** item launches the synchronization with the current validated values (choice of databases, synchronization mode and server parameters). Make sure these settings are correct before starting the synchronization.

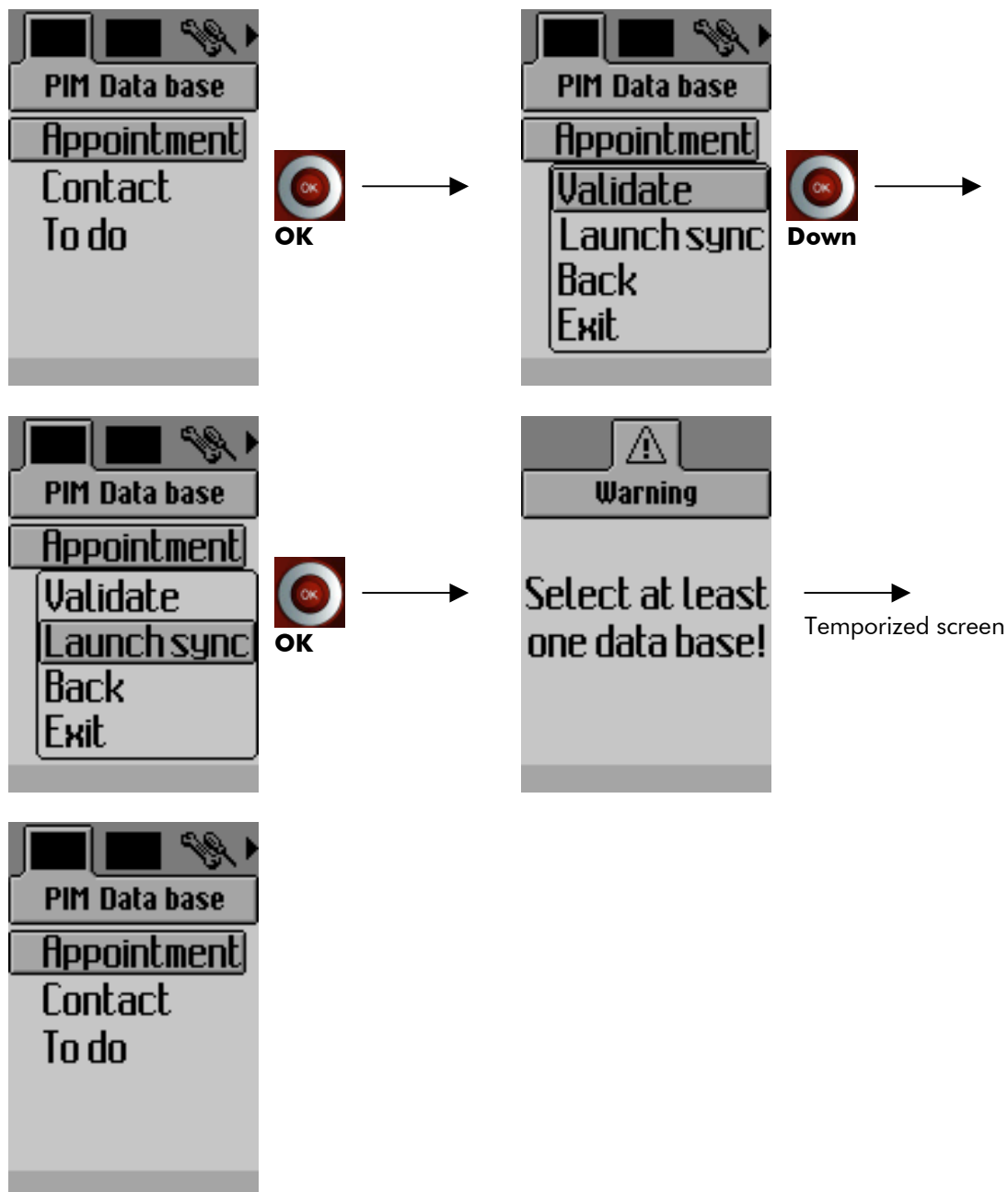
5.6.1 Synchronization when database is selected

This is the nominal situation, when one or more database have been selected and are ready for synchronization. Use the **Launch sync** item to start the process (a screen is displayed, warning the user that a synchronization is in progress). A status message is also displayed when the synchronization of each selected database is completed.



5.6.2 Synchronization when no database is selected

At least one database must be selected in order to perform a synchronization. If no database is selected, a warning message is displayed as illustrated below:



6 Parameters

6.1 Synchronization parameters

The set of synchronization parameters is detailed in the table below (**Fact.** stands for factory, meaning the parameter can be modified by the manufacturer. **User** means the phone's user can modify the parameter himself):

Description		Modifiable by		Semantic
		Fact.	User	
Synchro Info				
db to synchronize	Contact, Todo, Appointment	No	Yes	Selection of 1, 2, or 3 of possible PIM database to synchronize.
Mode	Fast, Full, Refresh	No	Yes	Selection of one of the possible modes.
Server Info				
Server URL	String	Yes	Yes	URL of server synchronization resource
Server login	String	Yes	Yes	Login on synchronization server
Server password	String	Yes	Yes	Corresponding password.
Default profile	Profile data set	No	Yes	WAP default profile (see next section).
Distant Contact				
Identifier	String	Yes	Yes	Name of distant database
Login	String	No	Yes	User name for distant database
Password	String	No	Yes	Related password
Distant Todo				
Identifier	String	Yes	Yes	Name of distant database
Login	String	No	Yes	User name for distant database
Password	String	No	Yes	Related password
Distant Appointment				
Identifier	String	Yes	Yes	Name of distant database
Login	String	No	Yes	User name for distant database
Password	String	No	Yes	Related password

6.2 Profile definition

The ONE TOUCH™ 715 handset's SyncML synchronization is based on the WAP transport protocol stack, itself configured by a WAP profile. The WAP profile used during a SyncML synchronization session is the same as the profile used to browse the WAP (WAP default profile). It is possible to display the default WAP parameters by using menus in the synchronization MMI. These parameters are listed in the table below:

Description		Modifiable by			Semantic
		Fact.	Prov.	User	
ProfileInfo					
Name	String	Yes	Yes	Yes	Profile name as displayed to the user.
ProfileLock	Yes/No	Yes	No	No	Indicates if the profile can be modified by the user.
ProvisioningFlag	Yes/No	Yes	No	No	Indicates if the profile can be OTA provisioned or not.
GatewayInfo					
IP address	IPV4	Yes	Yes	Yes	IP address of the WAP Gateway.
IP port	1 integer (2 bytes coded)	Yes	Yes	Yes	IP port of the WAP Gateway.
Home URL	String	Yes	Yes	Yes	URL the WAP Browser gets at activation.
Start Page	Byte	Yes	No	No	Last visited page or Home URL.
CSD bearer					
Main RAS Number	Phone number	Yes	Yes	Yes	Access point phone number
Main Modem type	UDI/V32	Yes	Yes	Yes	Analog or digital.
Main Modem speed	14400/9600	Yes	No	Yes	Modem connection speed.
Spare RAS Number	Phone number	Yes	Yes	No	Access point phone number (automatically used for roaming)
Spare Modem type	UDI/V32	Yes	Yes	No	Analog or digital (automatically used for roaming)
Spare Modem speed	14400/9600	Yes	Yes	No	Modem connection speed (automatically used for roaming)
CSD PPP script	String	Yes	Yes	No	PPP connection script
CSD User authentication type	Byte	Yes	Yes	No	PPP Authentication type (none, PAP, CHAP, PAP/CHAP)
CSD User login	String	Yes	Yes	Yes	PPP Login
CSD User Password	String	Yes	Yes	Yes	PPP Password
GPRS bearer					
APN	String	Yes	Yes	Yes	Access Point Name
GPRS User authentication type	Byte	Yes	No	No	Authentication type (none, PAP, CHAP).
GPRS User Login	String	Yes	No	Yes	User Login
GPRS User Password	String	Yes	No	Yes	User Password

7 Appendices

7.1 *Capability checking*

Before starting synchronization from WAP navigation, the server must verify that the handset is an ALCATEL ONE TOUCH715 to ensure that this feature is supported. UAPROF properties should be used for this purpose. The **<Man>** tag in the UA profile is used to specify the manufacturer while the **<SwV>** tag is used to specify the software version.

In this particular case, the server will check that:

- **Manufacturer** property is set to **ALCATEL**
- **Version** property is set to **BF5R1**

7.2 *SyncML compliance (Openwave ICS)*

The *Openwave* synchronization client implemented in Alcatel's ONE TOUCH™ 715 handsets has successfully performed all conformance and interoperability tests in accordance with the Interoperability Conformance Statement (ICS) document available at www.syncml.org.

7.3 vCard compliance

This implementation is compliant with the vCard 2.1 standard with following restrictions:

- supported charset includes ASCII and UTF8.
- fields sizes are limited to a fixed value (refer to the table below). When an object exceeds this size, the data is truncated to the max. limit (i.e.: the first 151 characters of the SUBJECT).
- when a particular vCard property is not supported, the field is "blanked" in the PIM.

Note: when objects exceed the maximum sizes listed below, the data is truncated to the maximum limit (i.e.: the first 51 characters of the NAME). The remaining info is lost.

The list of supported fields and mapping on PIM is provided in next paragraph.

7.3.1 PIM record contact entry

Contact database PIM records are mapped on vCard object in order to be exchanged through SyncML protocol. The following table describes how fields of Contact records are mapped on vCard.

Note: The maximum number of Contact records is 800.

Contact property	vCard property	Max. size
LASTNAME	N	51 (or 25 UCS2 characters)
FIRSTNAME	N	51 (or 25 UCS2 characters)
COMPANY	ORG	51 (or 25 UCS2 characters)
JOB TITLE	TITLE	51 (or 25 UCS2 characters)
NOTE	NOTE	151 (or 75 UCS2 characters)
WORK PHONE NUMBER	TEL;WORK	61
MAIN PHONE NUMBER	TEL;PREF	61
FAX PHONE NUMBER	TEL;FAX	61
OTHERPHONENUMBER	TEL;VOICE	61
PAGER PHONE NUMBER	TEL;PAGER	61
MOBILE PHONE NUMBER	TEL;CELL	61
HOME PHONE NUMBER	TEL;HOME	61
EMAIL1	EMAIL	50 (no UCS2 for e-mails)
EMAIL2	EMAIL	50 (no UCS2 for e-mails)
ADDRESS	ADR (3 rd value in address field)	151 (or 75 UCS2 characters)
CITY	ADR (4 th value in address field)	51 (or 25 UCS2 characters)
STATE	ADR (5 th value in address field)	51 (or 25 UCS2 characters)
ZIP	ADR (6 th value in address field)	21 (or 10 UCS2 characters)
COUNTRY	ADR (last value in address field)	51 (or 25 UCS2 characters)
CUSTOM1	X-ALCATELBF5-CUSTOM;1;Custom1	61 (or 30 UCS2 characters)
CUSTOM2	X-ALCATELBF5-CUSTOM;2;Custom2	61 (or 30 UCS2 characters)
CUSTOM3	X-ALCATELBF5-CUSTOM;3;Custom3	61 (or 30 UCS2 characters)
CUSTOM4	X-ALCATELBF5-CUSTOM;4;Custom4	61 (or 30 UCS2 characters)

7.4 vCalendar compliance

This implementation is compliant with the vCalendar 1.0 standard with following restrictions:

- supported charset includes ASCII and UTF8.
- fields sizes are limited to fixed values (refer to the table below).
- a record which contains a field not supported by the PIM or by the converter is synchronized without this field.

Note: when objects exceed the maximum sizes listed below, the data is truncated to the maximum limit (i.e.: the first 151 characters of the SUBJECT). The remaining info is lost.

The list of supported fields and mapping on PIM is provided in the next paragraph.

7.4.1 Todo database record mapping

Todo database PIM records are mapped onto vTodo objects (vCalendar) in order to be exchanged through SyncML protocol. The following table describes how fields of Todo records are mapped onto vCalendar.

Note: The maximum number of *ToDo* records is 60.

Todo property	VCalendar property	Max. size
DUE DATE	DUE	4 bytes
ALARM DATE	AALARM (sub-field corresponding to alarm date)	4 bytes
ALARM TIME	AALARM (sub-field corresponding to alarm time)	4 bytes
SUBJECT	DESCRIPTION	151 char. (75 in UCS2)
COMPLETED	STATUS	1 byte TRUE (task is done) FALSE (task is not done)
PRIORITY	PRIORITY	1 byte 0 (high) 1 (normal) 2 (low)

7.4.2 Appointment database record mapping

Appointment database PIM records are mapped onto vEvent objects (vCalendar) in order to be exchanged through SyncML protocol. The following table describes how fields of Appointment records are mapped onto vCalendar.

Notes: The maximum number of *Appointment* records is 1000. Start Time and End Time are on the SAME day (an appointment cannot span on the next day: the end time is limited to 23h59).

Appointment property	VCalendar property	Max. size
DATE	DTSTART (sub-field corresponding to date)	4 bytes
START TIME	DTSTART (sub-field corresponding to time)	4 bytes
END TIME	DTEND (sub-field corresponding to time)	4 bytes
ALARM DATE	AALARM (corresponding to alarm date)	4 bytes
ALARM TIME	AALARM (corresponding to alarm time)	4 bytes
SUBJECT	DESCRIPTION	151 char. (75 in UCS2)

7.4.3 Recurrent events

7.4.3.1 Supported recurrent events

The content parser component is in charge of parsing the property value if the property value is represented in special grammar and not understandable for the clients.

The vCalendar defines some properties on recurrence characteristics description for vToDo and vEvent. They are RNUM, RDATE, RRULE, EXDATE and EXRULE. Because the PIM does NOT support exception rules of recurrent events, the ONE TOUCH™ 715 does not support EXDATE and EXRULE in the Content Parser component.

The RNUM property is optional. When the value of RNUM does not match the computed number of recurrence, it will be ignored and the computer number of recurrences will be used. For RDATE property, we can get accurate numbers of recurrences by counting the DATE items followed by the RDATE keyword. For RRULE property, the number or the end date is usually provided directly, so the RNUM property can be ignored in parsing.

Two recurrent events are therefore supported through properties:

- **RDATE** to define a list of date/time for a recurring vCalendar entity.

Example of RDATE: 19960402T010000Z;19960403T010000Z;19960404T010000Z

- **RRULE** to define a rule or repeating pattern for a recurring vCalendar entity.

Example of **RRULE:W2 TU TH** //every other week, on Tuesday and Thursday
 RRULE:D1 #10 //daily for 10 occurrences
 RRULE:YML 6 7 #8 //yearly in June and July for 8 occurrences

7.4.3.2 RRULE grammar

For RRULE, it is necessary to design an arithmetic to map the source recurrent vCalendar object to one EventType. The recurrent vCalendar object is represented in the grammar below:

```

RRULE:: =    <Daily> [<enddate>] or
              <Weekly> [<enddate>] or
              <Monthlybypos> [<enddate>] or
              <Monthlybyday> [<enddate>] or
              <Yearlybymonth> [<enddate>] or
              <Yearlybyday> [enddate]

Dailly      ::= D<interval> [<duration>]
Weekly      ::= W<interval> [<weekdaylist>][<duration>]
```

Monthlybypos ::= MP<interval> [<occurrencelist> <weekdaylist>] [<duration>]
 Monthlybyday ::= MD<interval> [<daynumberlist>] [<duration>]
 Yearlybymonth ::= YM<interval> [<monthlist>][<duration>]
 Yearlybyday ::= YD<interval> [<daylist>][<duration>]

Note: Some complex RRULE and RDATE are not supported because they lack PIM support. Choices for PIM conversion of such complex recurrent events are detailed in **chapter 9**, at the end of this document.

8 Messages strings

This section sums-up the error messages displayed by the ONE TOUCH 715 handset while performing a synchronization or using the WAP browser. **Note:** These messages are translated into the mobile language.

8.1 SyncML messages

SyncML messages	Description
Sync session is cancelled.	User has cancelled a sync that was in progress
Sync In Progress...	A synchronization session to a SyncML server is underway, three dots are animated at the end of this string.
Sync session is failed	A fatal server or client error was encountered during a sync that prevented the sync completing.
Sync session is successfully completed.	The sync completed successfully without any errors.
Phone memory is busy. Please try later.	The sync could not start/continue as the device is reporting <i>kStsMMcDeviceBusy</i> , ie the device memory is defragmenting. If a sync was in progress, it will be aborted

8.2 Sync Client error codes

Sync Error	Description
1<http error code>	<p>General HTTP error (e.g. 500 "Could not connect" or 404 "Not Found", etc.) occurring during a sync session.</p> <p>The HTTP error codes are offset from 1000 to distinguish them from SyncML error codes. User action to correct will depend on the Http error, but generally the sync parameters should be checked.</p> <p>Examples:</p> <p>Sync Error: 1500 (could not connect)</p> <p>Sync Error: 1404 (not found)</p>
101	SyncML Server Busy. User should try later.
<4xx>	<p>Any 400 series errors are SyncML defined errors, please refer to the SyncML Representation Protocol Specification, v1.0.1 for the definitions.</p> <p>400 Series errors are "Originator Exceptions" and indicate that the SyncML server has made a bad request of some kind. All 400 series codes cause the Sync client to stop the sync, except 407, which is treated as an authentication request.</p> <p>User actions for specific errors:</p> <p>401 – check the username and password</p> <p>404 – check the server database name</p> <p>415 – Server sent incorrect format vCard/vCal, try another server</p> <p>420 – Out of memory, delete unused contacts/ calendar records</p>
5xx	<p>All 500 series errors are SyncML defined errors, please refer to the SyncML Representation Protocol Specification, v1.0.1 for the definitions.</p> <p>500 Series errors are "Recipient Exceptions" and indicate that the client failed whilst processing the command. Generally there is no user action to perform to correct the situation except possibly browser reset or device power off and on.</p>
901	The parameters passed to the sync client to start a sync are incorrect. User should check for invalid or missing parameters, but is not due to the username or password

	<i>parameters.</i>
902	<i>The user has attempted to synchronise whilst the device is being provisioned. The User should wait until the provisioning has stopped and retry the sync.</i>
903	<i>A user has tried to start a synchronisation, but the synchronisation client could not start, due to internal memory problems. The user should reset the browser (if this has not happened already automatically) and retry.</i>
904	<i>Not currently used.</i>
905	<i>Not currently used.</i>
906	<i>A syncML server has sent a badly formed SyncML packet, that does not contain a valid status response.</i>
907	<i>Internal failure when attempting to synchronise all the databases. User should retry and if problem persists, should synchronise each database individually.</i>
908	<i>"Phone memory is busy. Please try later". Device has returned a busy code, to indicate that it cannot complete the requested operation. User should retry after a short delay, if problem persists, turn handset off, back on and retry.</i>
909	<i>Server has sent a zero length SyncML packet.</i>
910	<i>The client has detected that it cannot fast sync, this will be either because it has lost its last sync anchor, or the changelog has overflowed and the next anchor cannot be recovered. In this instance the client will request a slow sync. If the server insists on requesting a fast sync, the sync client will have to abort, as it cannot perform one. User should reset server database if possible and retry, if problem persists, user should inform server manufacturer.</i>
911	<i>Device failed to bulk delete its database. User should retry, if problem persists, user should manually delete the database and perform a Full sync instead of a Refresh sync.</i>
912	<i>The client has detected a LUID from a server that is larger than 128 bytes. Sync client restricts server LUIDs to 128bytes for performance and storage reasons. User can retry and if problem persists, should sync to another server.</i>
913	<i>The client has detected a LUID from the device that is larger than 128 bytes. Sync client restricts device LUIDs to 128bytes for performance and storage reasons. User should perform any reset that is available on the device, however this error should never occur if the device always uses valid sized LUIDs.</i>
914	<i>The device failed when the sync client called DevReleaseDatabase. This will result in the sync anchors being invalidated, forcing a full sync next time. User should perform another sync to ensure data integrity. If problems persists, user should turn phone off and on and retry.</i>
915	<i>Got something unexpected back from a sync post, e.g. not a syncML type. User should retry, if problem persists, check all sync parameters are correct and try again.</i>
916	<i>Client requests data from the PIM and the device cannot provide it, possible PIM corruption. User should retry, if problem persists, turn handset off and back on and retry.</i>
917	<i>Client trying to write data, either PIM or changelog start point, device cannot complete the operation. User should retry, if problem persists, turn handset off and back on and retry.</i>
918	<i>A reply came back for the sync client, but it was badly formed, or had an incompatible charset type to that allowed on the device.</i>
919	<i>SyncML server sent back an invalid status code (a protocol failure)</i>
999	<i>The Sync client was unable to establish a network connection. User should check that WAP settings are correct and that the device has network coverage, then retry, if problem persists, restart the browser or handset and retry.</i>

8.2.1 WAE Processing error strings

WAE Processing error strings	Description
Press OK to go home	

8.3 System errors

System error strings	Description
Not enough memory for operation	<i>A system error has occurred due to lack of memory. This should not happen in normal circumstances.</i>
Security error: wrong key	<i>The key used to in the secure transaction is invalid.</i>
Security error: no key	<i>A key is needed to perform the secure transaction.</i>
System error	<i>A system error has occurred. This should not happen in normal circumstances.</i>

8.4 Network error strings

Network error strings	Description
Server not responding	<i>The request was sent by the device, but no response was received.</i>
Network not responding	<i>For circuit data devices, the data call cannot be set up even though the device is in an area of coverage and signal strength is strong. (For example, the circuit data call cannot be completed due to lack of capacity)</i>
Network not available	<i>Signal strength is strong, but data network is not available. For example, a CDPD-based device would use this message when AMPS signal is strong, but no CDPD channel can be acquired.</i>
Unrecoverable security error	<i>A non-recoverable security error has occurred. The user should call customer support of the network operator for more information.</i>
Security error: key not recognised	<i>A security error has occurred due to an unknown key. The user should call customer support of the network operator for more information.</i>
Security error: key disabled	<i>A security error has occurred due to a disabled key. The user should call customer support of the network operator for more information.</i>
Security error: key exchange disabled	<i>Key exchange was attempted by the user and rejected by the WAP Proxy.</i>
Network error: Data too large	<i>The packet size was too large.</i>

8.5 System error strings

System error strings	Description
Not enough memory for operation	<i>A system error has occurred due to lack of memory. This should not happen in normal circumstances.</i>
Security error: wrong key	<i>The key used to in the secure transaction is invalid.</i>
Security error: no key	<i>A key is needed to perform the secure transaction.</i>
System error	<i>A system error has occurred. This should not happen in normal circumstances.</i>

9 Support of recurrent events

As specified in section 7.4.3.1, the EXDATE and EXRULE properties of vCalendar are NOT supported because of PIM limitations; and the RNUM property is optional. Thus, recurrent events are supported by the RDATE and RRULE properties.

9.1 Choices for RDATE-to-PIM event conversion

RDATE Stands for Recurrent Date/Time.

If both RDATE and RRULE appear, accept the RRULE information and ignore the RDATE information.

<i>Choices for RDATE to PIM event conversion</i>			
<i>Property Name</i>	<i>Keyword</i>	<i>Supported</i>	<i>Description</i>
RDATE	RDATE	Partly supported	See note1

Note 1:

- first sort all the date/time items in RDATE, then confirm that the interval between these dates is regular and has the same alarm time.
- Alarm date and alarm time must appear. Their values must be greater (i.e., later than) than system date and time. The alarm date is used as start date to compute the end date

For example:

- RDATE:20010803T000000 /* OK */Alarm at 00 :00 :00 on 08/03/2001
20010803 means the alarm date is 3 Aug 2001. 'T' means time and T000000 means alarm time is 0
- RDATE:20010803T000000;20010805T000000 /* OK */
This rule means the event will repeat twice, first at 0 on 3 August 2001, then at 0 on 5 August 2001.
- RDATE:20010803T000000;20010805T000000;20010807T000000 /* OK */
This rule means the event will repeat three times, the interval date is two days.
- RDATE:20010803**T010000**;20010805**T110000**;20010807**T000000** /* KO, do not have the same time */
This kind of RDATE is not supported, because its items do not have the same alarm time. The first item is 01 :00 :00, the second is 11 :00 :00 and the last is 00 :00 :00.
- RDATE:200108**03**T000000;200108**05**T000000;200108**06**T000000 /* KO, interval not regular */
This kind of RDATE is not supported, because its items do not have the same date interval. The interval between the first two items is two days, while the interval for the last two items is one day.

9.2 Choices for RRULE to PIM event conversion

RRULE stands for Recurrent Rule.

<i>Choices for RRULE to PIM event conversion</i>			
<i>RRULE name</i>	<i>Keyword</i>	<i>Supported</i>	<i>Description</i>
DAILY RULE	D	Yes	See Note 1
WEEKLY RULE	W	Partly Supported	See Note 2
MONTHLY BY POS	MP	Not supported	See Note 3
MONTHLY BY DAY	MD	Not supported	See Note 4
YEARLY BY MONTH	YM	Partly supported	See Note 5
YEARLY BY DAY	YD	Not supported	See Note 6

Note 1:

Daily : Supported

For example,

RRULE:D10 #5 20011001T000000 /* OK */

Every 10 days, five occurrences until 10/01/2001.

D10 means every 10 days, #5 means repeated five times, 20011001T000000 is the end date.

Note 2:

Weekly : Partly supported

The case in which both frequency and weekday items are greater than one is not supported.

For example,

RRULE:W1 TU TH #5 /* OK */

RRULE:W2 TU #5 /* OK */

RRULE:W2 TU TH #5 /* KO */

Every other week on Tuesday and Thursday, repeated five times.

W2 means every other week, TU and TH means on Tuesday and Thursday, #5 is the repeat time

Note 3:

Monthly by position : Not supported

Following are some examples :

RRULE:MP2 1+ MO TU WE 2+ MO TU WE #10 /* K0 */

Every other month on the 1st and 2nd Mondays, Tuesdays and Wednesdays of the month for 10 occurrences.

RRULE:MP2 1+ **MO TU WE** 2+ **MO TU** #10 /* KO */

RRULE:MP2 1+ **MO TU** 1- **MO TU** #10 /* KO */

RRULE:MP2 1+ **MO** 2+ **SU 1- TU** #10 /* KO */

Note 4:

Monthly by day : Not supported

RRULE:**MD**18 10 11 12 13 14 2- LD #10 /* KO */

Note 5:

Yearly by Month : Partly supported

ONE TOUCH™ 715 supports simple instances: there can be only ONE month. This type of PIM event is repeated yearly.

RRULE:YM2 2 #10 /* OK */

Every other year in Feb for 10 occurrences.

RRULE:YM2 **1 2 6 7** #10 /* KO.

Every other year in January, February, June and July for 10 occurrences. The occurrences are requested for four separate months while we support "one month" request cases only. This kind of RRULE is not supported.

Note 6:

Yearly by day : Not supported

RRULE:YD3 1 100 200 #10 /* KO */

We do not support the RRULE of YEARLY BY DAY (YD).

9.3 Choices for PIM event to RRULE conversion

<i>Choices for PIM event to RRULE conversion</i>		
<i>PIM Event Type</i>	<i>Required field</i>	<i>Build result example</i>
ANNUAL	Month (1-12) Day (1-31)	RRULE:YM1 6 20010601T000000
DAILY REPEAT	Frequency Stop date	RRULE:D2 20011001T000000
WEEKLY REPEAT	Frequency Day of week (1-7) Stop date	RRULE:W2 FR 20011001T000000
MONTHLY REPEAT	Frequency Day (1-31) Stop date	RRULE:MD2 10 20011001T000000
MONTHLY BY POS	Frequency Week of month (1-31) Day of week (1-7) Stop date	RRULE:MP2 2+ TU 20011001T000000
YEARLY REPEAT	Frequency Month (1-12) Day (1-31) Stop date	RRULE:YM2 6 20011001T000000
MIXED BY POS	Frequency Month array (must all be true) Week array Day array Stop date	RRULE:W2 TU TH 20011001T000000 RRULE:MP2 1+ MO TU WE 2+ MO TU WE 20011001T000000

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