



Dear All,

Welcome

Let us greet you once again, as the first regular issue of CeDaR News appears in 2003. This May issue is focusing on our newly developed solutions called **CeDaR Utilities** and our related services. You'll find all the necessary information about these new exciting members of the CeDaR product family inside this edition. Moreover, we give you some coverage on the

installation and training of CeDaR Scripting Edition at one of our most prestigious clients, Rogers AT&T Wireless.

We wish you a pleasant time reading the latest edition of CeDaR News! As always, we warmly welcome your feedback either on our newsletter or on our products and please visit our web-site: www.allround.net

VISIT
ALLROUND's stand
at the TADIG #55
Plenary Meeting
London, 20-22 May

We kindly invite you to our stand, where we will be ready to provide you more information about CeDaR Utilities, our solutions to solve your TAP- and CDR-related problems. We would also be happy to hear your requirements and ideas regarding these issues. You will also have the chance to see our flagship product, CeDaR Interactive for Mobile in action as well.

CeDaR Utilities New solutions from ALLROUND for TAP- and CDR-related problems

CeDaR Utilities are standalone, customer specific, ready-to-run solutions solving TAP- and CDR-related problems. They have been developed with the purpose of making life easier for mobile network operators when it comes to the specific tasks of **format conversions, filtering, validation, data extraction** to name a few. These tasks are – due to their specific nature – often not covered by billing or other CDR processing systems. In the current practice, they are either

carried out as an outside service for the mobile network operator making the process rather cumbersome or are offered only as a part of a complex, large system.

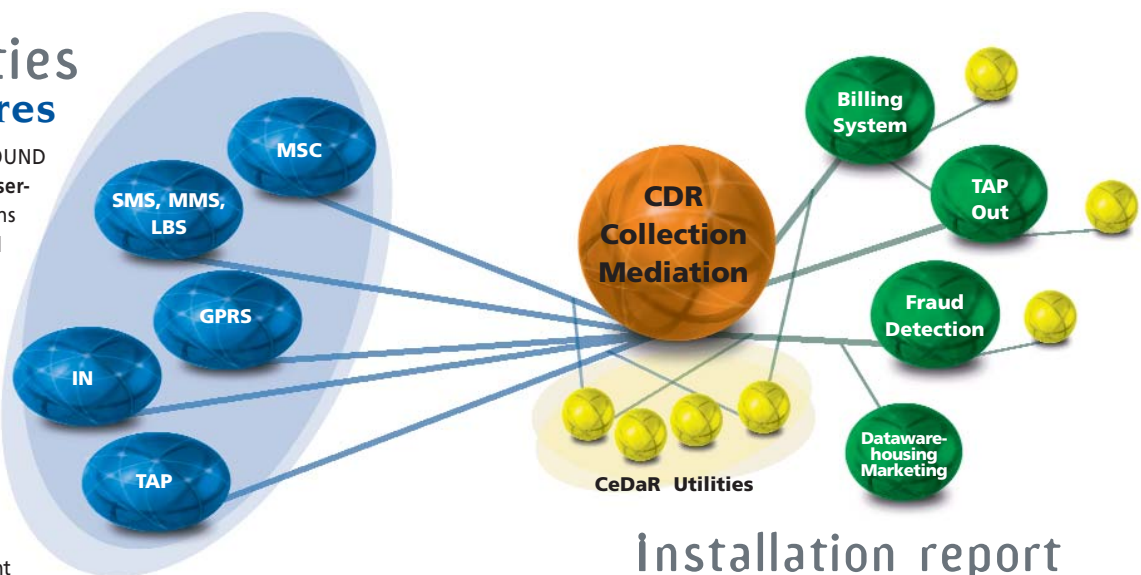
But what if an operator itself could find a solution for **solving these tasks with special tools** that address the specific problems at hand and can be easily integrated to existing systems?

ALLROUND's CeDaR Utilities have been designed with the above in mind. We wanted to create a

solution to solve these tasks in a **cost-effective way** without having to modify any of the existing systems. Our approach is focusing on solving the specific task and is independent of the current application environment. The resulting tools have a small footprint, do not require modifications of existing tools and therefore do not incur any additional direct or hidden costs. Once installed, a CeDaR Utility provides operators with a compact and reliable solution.

CeDaR Utilities General features

As a new service, ALLROUND delivers well-defined, user-specific, standalone applications within a short period of time based on our CeDaR Interactive for Mobile application. A CeDaR Utility solves specific problems, it has a very small footprint, it is easy to install, it runs on every major computer platform and does not require special environment, training and on-site installation service. At the same time several CeDaR Utilities can be installed and run at different stages of the CDR process flow executing their own specific task. For improved manageability, an SNMP-based centralized management solution is available as an option.



Installation report

Upgrade to CeDaR 1.3 Scripting Edition at Rogers

In our highly successful partnership with Canada's leading mobile network operator, Rogers AT&T Wireless, a new milestone has been reached. Based on the proven performance and



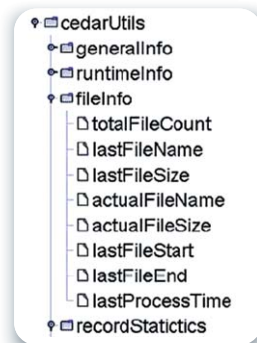
benefits of CeDaR Standard Edition, Rogers decided to upgrade to the highly sophisticated Scripting Edition, the installation, customization and testing of which has now been successfully completed.

SNMP Support for CeDaR Utilities

➤ **SNMP** (Simple Network Management Protocol) has been designed to enable the central and easy management of complex network environments. It is also widely used to manage software applications running on remote computers.

CeDaR Utilities mostly run in distributed environments, do their jobs continually and select their input automatically. These Utilities are able to provide information about their status. The SNMP management support provided by CeDaR Utilities is the appropriate tool for this purpose. The SNMP management interface provides statistical data, for example about the CDR files

and records processed. CeDaR Utilities can be managed with any SNMP based management systems. ◆



Development Environment

The generation of CeDaR Utilities is based on a unique and highly innovative development environment:

- Data-driven format handling
- Designing of CeDaR Utilities with the help of CeDaR Interactive for Mobile
- Functional testing of CeDaR Utilities in the same interactive environment
- CeDaR Utilities are generated by an application generator developed by ALLROUND — therefore quality is guaranteed
- CeDaR Utilities are standalone applications, no CeDaR Interactive for Mobile or any other components are needed to run them. Due to their Java engine they are platform-independent.

Q Are these CeDaR Utilities fast enough for production?

A Yes, the performance of CeDaR Utilities is appropriate for production.

Sample Performance Results:

(on Pentium4 2,4 GHz, 1 GB RAM, Windows2000)

- Converting CDRs from TAP1 to TAP3: ~ 1.000 CDRs/sec or approx. 3,6 M CDRs/hour
- Filtering specific types of records from file: ~ 1.500 CDRs/sec or approx. 5,4 M CDRs/hour
- Multiplication of template records: ~ 1.500 CDRs/sec or approx. 5,4 M CDRs/hour

The implementation of Utilities allows linear scalability, by running them simultaneously or in a distributed way.

Q How are CeDaR Utilities produced? How can customers get them?

A The way of producing CeDaR Utilities can be seen on the **design-build-run model**. Due to the specific task and the effective coding method the generated application can be sent via e-mail or downloaded from ALLROUND's website.

We look forward to meeting you at our stand at the **TADIG #55 Plenary Meeting! LONDON, 20-22 May**

CASE STUDY

Conversion from TAP1 format to TAP3.10 – TAP Version Converter



The problem

➤ Many mobile network operators face the problem of having to convert CDR data between different versions of the TAP format. Developing such a converter „in-house“ requires deep knowledge and expertise; it usually takes several months of development and testing. Another costly approach is when format conversion is carried out as an external service for the mobile network operator.

The task

➤ The task is to convert TAP1 data to TAP3.10 format, adding all the necessary fields not present in the TAP1 format creating the more complex structure of the new format, using intelligent generating algorithms. As the amount of handled data might be relatively high (several millions of CDRs a day), solid performance is necessary. The parameters used when converting data from TAP1 to TAP3.10 have to be user-configured and the solution has

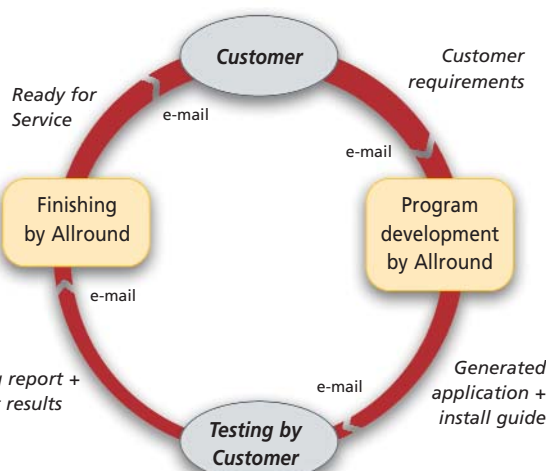
to provide the possibility to be tracked over a network connection. Since CeDaR Utilities can also be used interactively, a user interface shall be provided.

The solution

➤ ALLROUND's solution is a standalone application – a CeDaR Utility – that uses XML parameter files for setting conversion parameters, and SNMP support for monitoring and administration. Its performance is very adequate: around 1.000 CDRs per second on Intel platforms. This CeDaR Utility can be run from a command-line, even in a scheduled manner, while the Java-based user interface gives the possibility to make conversions interactively.

Conclusion

➤ By applying this CeDaR Utility operators save conversion costs, get a fast and reliable solution that generates valid results according to rules defined in TD.57. ◆



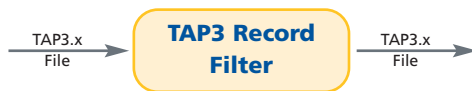
Q On what platforms do CeDaR Utilities run?

A CeDaR Utilities are standalone applications running on every major computer platform: UNIX, LINUX and Windows NT/2000.



CASE STUDY

Complex filtering tool for TAP3 files – TAP3 Record Filter



The problem

When making test calls, test records get mixed with production records within a single file. Separating these records is very difficult without a proper tool because test files should contain only the selected test records (and no other production call records that are protected by data security regulations) and should have a much-reduced size. In this way, it is much easier to define and check cross-referencing between test records and test cases, therefore testing could be more reliable. To be able to quickly switch between different test scenarios and select a limited sub-set of test records would accelerate testing. Although the basic problem can be solved by an IMSI based filter, in other cases it might be necessary to apply further, even more complex filtering conditions.

The task

The task is to filter out CDRs from TAP3 files according to one or more conditions.

The parameters of these conditions shall be configurable and the conditions shall be switched on/off according to requirements.

The solution

ALLROUND's solution is a standalone application – a CeDaR Utility – that uses XML parameter files. This Utility filters the contents of the input file(s) according to the given conditions. The conditions can be set by modifying XML parameter files.

One or more of the following conditions can be used at the same time:

- >> IMSI range
- >> IMSI set
- >> Datetime range
- >> Calling Number like
- >> Called Number like

The list of conditions can be extended upon user's request (for example: filtering based on geographical location information).

Highlighted benefits of CeDaR Utilities

- >> Ready-to-run, customer specific solution instead of in-house development
- >> Short development and implementation time
- >> No additional software and hardware components are needed
- >> Easy integration into the existing IT environment, plus easy configuration
- >> Both batch and interactive operation through GUI
- >> Full documentation is provided, no training needed
- >> Low operational costs
- >> Efficient and reliable operation
- >> Optional annual support service

Conclusion

By applying this CeDaR Utility, operators can save time and conversion costs on creating test CDRs, thereby speed up their TAP testing procedures and the introduction of new TAP releases.

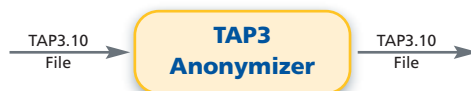
Q I've got a specific CDR-handling problem that is not on the toplist. How to suggest a new Utility for development that could solve my problem?

A Please feel free to describe your requirements: Send us the input/output formats and the task itself. CeDaR Utilities solve specific problems, they are like building blocks that could easily fit into your system. The list of CeDaR Utilities is updated constantly, please check our web-site regularly.

Q Are additional software tools needed for the operation of CeDaR Utilities?

A Except for Java Runtime Environment, they do not need any kinds of additional software. Although Utilities are developed using CeDaR Interactive for Mobile, they are independent, standalone applications.

CeDaR Utilities Toplist



TAP3 Anonymizer

This CeDaR Utility replaces user specific information with neutral data in the call records, so the data sent to third party developer companies will not contain sensible data.



TAP3 Release Converter

This CeDaR Utility converts CDR files of the previous TAP3 releases to TAP3.10 back and forth.



TAP3 Statistics

This CeDaR Utility generates statistics (based on record-types, timestamps, called/calling numbers etc.) from data in TAP3 files.



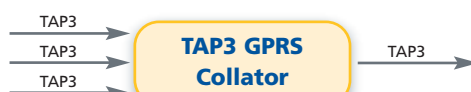
TAP3 to XML Converter

This CeDaR Utility converts TAP3 files into XML format.



TAP3 Validation Report

This CeDaR Utility reads and validates TAP3.10 files against the rules defined in TD.57 (3.10.1). The output is a file containing the result in an easily interpretable format that can also be processed by other systems.



TAP3 GPRS Collator

Builds a valid TAP3 file (including recalculation of header and trailer records, summary values, etc.) from TAP3 files by collating GPRS partials if possible.



TAP3 to NRRTRDE Converter

Converts data contained in TAP3 files to NRRTRDE format.

The demo versions of our CeDaR Utilities can be downloaded from our web-site:
www.allround.net/download

About us

- » Allround Informatika Kft. is an ISO 9001:2000 certified Hungarian company specialized in software development and consulting.
- » The company was established in 1991, it is a Microsoft Certified Solution Provider since 1995, Oracle Alliance Partner since 1997 and Oracle Certified Solution Partner since 1999.
- » Member of the Sun Developer Connection(SM) Partner Program since 2001.
- » Allround is an Associate Member of the GSM Association since April, 2002, listed under the categories Security Systems Supplier and GSMA Standards Supporter. Allround is represented in the following working groups of the GSMA: the File Specification Subgroup, the Security Group, TTS and TADIG. ♦



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CeDaR Interactive for Mobile

- » CeDaR is a range of software products and services that – depending on your needs – can consist of a TAP3 Browser or a test data generator or a mediation device.
- » It is a powerful application that provides you the possibility to handle any CDR processing tasks in a comfortable and easy way.
- » As a Call Detail Record editor, analyzer and generator tool, CeDaR enables you to load, filter, view, edit, create or generate CDRs for testing or real production.
- » CeDaR can also be seen as a fully flexible software system, handling both sequential and ASN.1 formats (TAP, NRTRDE, GPRS, MMS, IN etc.). CeDaR writes records exactly as a switch would write them, and provides an overall solution for CDR processing problems.
- » You can export all data in HTML, TXT or XML format.

CDR formats

Supported formats by CeDaR and CeDaR Utilities at present

As the CeDaR product family is an extremely format flexible range of interactive software products, handling both ASN.1, XML and sequential formats, it's of no surprise it supports various MSC, Billing System, GPRS and other vendor specific formats. Please note that since the last edition of CeDaR News, several new formats have been applied to the CeDaR product family.

MSC formats:

Ericsson CME20 R7, R8 (Rev.G),
 R8 XML (Rev.F), R8 PCS (Rev.E),
 R9.1 PCS (Rev.B),
 R9.1 (Rev.C)

Nokia DX200 M10 BCD/HEX
 Siemens CS1.0 MSE

GPRS formats:

Ericsson GSN 2.0, 2.1, 3.0 – **NEW**

GPRS UTX, UTX 2

Nokia GPRS CG 1.1, 2.0

Billing System formats:

Jupiter CCCF, CCCL, CTRL Ver 2.2 Rev 0.3

Rating DUMP2

Multimedia Messaging formats:

Multimedia Messaging Service 4.0.0

Multimedia Messaging Service 5.0.0 – **NEW**

TDMA formats:

Ericsson AS147, AS160

Standard formats:

GSM 12.05 (v7.0.1)

GSM 12.15 (v7.6.0)

Roaming data exchange formats:

TAP1 (TD.01 3.12.1)

TAP2+ (TD.17 3.13.0)

TAP3

3.2 (TD.57 3.6.0), (TD.57 3.6.2),

3.3 (TD.57 3.7.1),

3.4 (TD.57 3.8.1), (TD.57 3.8.2),

3.9 (TD.57 3.9.0),

3.10 (TD.57 3.10.1) – **NEW**

RAP 1.1 (TD.32 3.5.1)

for TAP3.2 (TD.57 3.6.2),

for TAP3.3 (TD.57 3.7.1),

for TAP3.4 (TD.57 3.8.2),

for TAP3.9 (TD.57 3.9.0)

RAP 1.2 (TD.32 3.6.2)

for TAP3.9 (TD.57 3.9.0),

for TAP3.10 (TD.57 3.10.1) – **NEW**

CIBER 2

Near Real Time Record Data Exchange

(NRTRDE) 3.0.0, 3.1.0 – **NEW**

Other formats:

CMG SMSC 3.5, 4.0

MPC 3.0

MNET (Cisco)

Pacific Ocean (Location Based Services) 2.0 PA8

Nokia Operator Wireless LAN 2 – **NEW**

We continuously extend the number of supported formats; so all inquiries are welcome even related to formats that are not supported yet. ♦



We look forward to meeting you at our stand at the **TADIG #55 Plenary Meeting! LONDON, 20-22 May**

in the next issue

- » CeDaR Editions: Scripting
- » Application examples
- » New Utilities
- » FAQ
- » Case studies
- » Latest list of supported formats



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