adic

AML Management Unit
3.02C

Release Notes

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1 Version 3.02 AMU Release Notes

This release notes covers the Version 3.02 release of the AML Management Software (AMU). If question arise about any of these notes, call theADIC/GRAU Technical Assistance Center at the appropriate number:

- 00-800-9999-3822

1.1 For Your Safety

Attention

The AMU 3.0 has processes which sends itself time controlled commands to robots. Please make sure, that nobody is inside the library, if the AMU will be started. The AMU send commands undepended of a started host software.

1.2   Requirements

The diskette of this AMU version is a complete version, which does not require a previous version of AMU software. AMU 3.02 can replace all previous installed AMU versions.
Three dikettes are delivered, the first diskette contained the installation program.
The following software releases are required:

Table 1-1   Software Release Rquirements

Software	Version
AML/2 robot software	AML/2 2.20F or higher
camera or scanner gripper:	(latest code level: AML/2 2.20F PN: 326R220F0, EC: 13091)
tower	(latest code level: AML/2 2.20G PN: 326T220G0, EC:)
parallel gripper	(latest code level: AML/2 2.30E PN: 326R230E0, EC:13025)
AML/E robot software	AML/E 2.20K or higher (2.30D for parallel gripper)
(scanner gripper):	(latest code level: AML/E2.20K PN: 426R220K0, EC: 13146)
(parallel gripper):	(latest code level: AML/E 2.30E PN: 426R230E0, EC: 13047)
AML/J robot software	PMAC SW 2.40D or higher (latest code level: PMAC 4.00 PN:206R4000, EC: 13427)
Scalar 1000	Scalar 1000 SCSI-Software 1.01 Scalar 1000 Microcode 1.01 or higher
DAS	UNIX: DAS 1.20 OS/2: DAS 3.02 or higher
SNI-robar	Robar-SV V2.5 or higher (recommended Robar-SV V3.0[a])
HACC/OS400	Version 2.2 or higher
HACC/VM	Version 1.4.2 or higher
HACC/MVS	Version 3.00 and PTF ZY30012[b]
TwinATL	Version S0308D20 and higher

a.Support of the new AMU 3.0-Features
b.Older versions of HACC/MVS do not support Dual-AMU and AMU-Clean-Management

Other host application software version prerequisites do not apply.

1.3 System Hard- and Software

Table 1-2 Hardware- and System-Software Requirements

Processor	Pentium 120 (minimum)
Memory	32MB Minimum (64MB recommended) Systems having heavy load or more than two hosts connected should have 64MB)
Disk	850 MB or more
IBM OS/2	Warp 3.0 with MPTS Fixpack WR08421 or higher (for update look at the ADIC/GRAU Service CD-ROM 3/1999 (326S00003) or ask ADIC/GRAU Technical Assistance)
IBM DATABASE 2	DB/2 2.1 or higher (highly recommended, for updates ask ADIC/GRAU Technical Assistance)
IBM Communications Manager	if necessary: CM/2 1.11 or higher
IBM TCP/IP	if necessary: OS/2 WARP CONNECT with TCP/IP support
Dataswitch (only AML/2 and AML/E with Dual AMU)	Automatic Data Switch **The Manual Data Switch, previous used for Backup AMU will not longer supported on AML/2 and AML/E.**

1.4 Updates

Updates of any of these products should be performed by authorized and trained personnel.

Update from AMU 2.00 and earlier

The update of AMU 2.00 to AMU 3.02 should be performed by authorized and trained personnel.

Update from AMU 2.20,AMU 2.30 or AMU 2.40

If the correct prerequisites have already been installed, an update to AMU 3.02 may be performed by trained customer personnel.

2   AMU Installation Program

2.1   Installation

Perform the following steps to install the AMU version 3.02 :

Step 1   Check the correct level of your system software with the command `syslevel` (MPTS, DB/2)
AMU 3.02 does not work with a older Database Manager and without the MPTS Fixpack WR08610)

Step 2   If you install an update stop the current processing. Run shutdown AMU. If you run an initial installation, begin with step 5.

Step 3   Open an OS/2 window.

Step 4   Change the name of the file STARTUP.CMD to STARTUP.ORG.

```
C:move startup.cmd startup.org
```

Step 5   Restart the computer (shutdown and boot).

Step 6   Insert the first diskette of AMU Software into the diskette drive or the CD-ROM in the CD-ROM drive.

Information

Do not interrupt the installation process. This may lead to undefined conditions and problems with the database.

Step 7   Open an OS/2 window and change to the drive or directory, where your AMU software is located
e.g.

```
C:> e:<Enter>
E:> cd amu302
```

Step 8   Enter in this directory

```
E:\AMU302> install
```

Step 9   Select the installation options

```
          I N S T A L L A T I O N    U T I L I T Y
               AMU - V E R S I O N  3.02
          ADIC/GRAU Storage Systems, 01-03-99 12:00:00

1 = New Installation of AMU Software
      (Installation without backup of an older Version)

2 = AMU Software Update from AMU 2.30x, 2.40x or 3.0xx
    to AMU 3.02

3 = AMU Software Update from AMU 2.1xx or 2.2xx to AMU 3.02

4 = AMU Software Update from AMU 2.0xx to AMU 3.02
    (Are you sure you have the correct robot software?)

5 = AMU Software Update from AMU 1.xxx to AMU 3.02
(Are you sure you have the correct robot software?)

6 = Deinstallation (Rollback) of a previously installed AMU 3.00

7 = End

Select an Option:
```

Step 10   For the subsequent prompts select the option suiting your system.

```
Would you like Scalar 1000 (SCSI) support (Y/N) <CR>
```

Select <Y> if you wish to use AMU for an Scalar 1000.

```
Would you like AML/J (PMAC) support (Y/N) <CR>
```

Select <Y> if you wish to use AMU for an AML/J.

```
Do you want the installation with Quadron Support?
(Y/N) <CR>
```

Select <Y> if you run an initial installation and wish to enter the driver input for the IBM-RIC-board into the configuration files. For an update always select <N>.

Step 11   Login with AMUADMIN when prompted to log on.

Warning

 Please do not interrupt the installation process.

Step 12   Remove the diskette from the drive.

Step 13   For User of Dismount Manager Clean Manager and Dual-AMU, for a new installation, this step must be done after the first start of the AMU (but before you start work with it):
Write the modules for automatic start in the file
 AmuConf.INI
Use the following command, like the following example:

```
C:> cd amu
C:\AMU> patini PROC KRNLOAD "UPM ARC HOC BUD CLM DIM"
```

Table 2-1   Load modules for Kernel

Using functions	Load modules
Dual-AMU	UPM ARC HOC BUD
Dismount Manager	UPM ARC HOC DIM
Clean Manager	UPM ARC HOC DIM CLM
Dual-AMU with Dismount Manager	UPM ARC HOC BUD DIM
Dual-AMU with Clean Manager	UPM ARC HOC BUD DIM CLM

Step 14   If you run an update installation, reverse the renaming of the filename of STARTUP.CMD und change the part
START KRN START CON to START AmuStart

```
C:> copy startup.org startup.cmd
```

Step 15   Configure the AMU start options in AmuStart.cmd

Step 16   After the first start and the actualisation of the table pool:
- insert the of clean cartridges from Host in the AMU database

- insert and actualisation of scratch tape pools
stop the AMU and run:

```
C:\amu> arcbndit
```

The following steps only apply to systems with a second harddisk (AML controller).

Step 17   Terminate OS/2 and restart the computer.

Step 18   Wait until the following appears on the top left corner on the monitor:
■ OS/2

Step 19   Press keys <Alt>+<F1>

```
                        RECOVERY CHOICES


Select the system configuration file to be used, or enter the option
correponding to the archive desired.

ESC - Continue the boot process using \CONFIG.SYS without changes
C   - Go to command line, (no files replaced, used orginal CONFIG.SYS)
V   - Reset primary video display to VGA and reboot
M   - Restart the system from Maintenance Desktop (Selective Install)

Choosing an archive from the list below replaces your current CONFIG.SYS,
Desktop directory, and INI files with older versions. These older versions
might be different from your current files. Your current files are savrd in
\OS2\ARCHIVES\CURRENT.

1) Archive created 18.6.97 12.00.00
2) Archive created 18.6.97 12.10.00
3) Archive created 18.6.97 12.20.00
X) Orginal archive from INSTALL created 18.6.97 10.00.00
```

Step 20   Select <C> as command line.

Enter the following commands:

```
C:> xcopy d:\amu\dbbackup\*.* c:\amu\dbbackup\
C:> format d: /FS:HPFS -label OS2
C:> xcopy c:*.* d:/h/o/t/s/e/r/v
C:> del d:\amu\logs-trc\*.001
C:> exit
```

Step 21   Please refer to „Update Specialties" of Chapter 2

Step 22   For Systems with VTAM Connection: Please have a look at the AMU Reference Guide and the CM/2 Documentation.

2.2   Deinstallation

During the installation, the previous AMU version, if present, was saved into backup directories. Selecting the corresponding option from the installation program menu allows to deinstall the AMU Version 3.02 and restore the previous installed AMU Version:

Step 1   Stop operation of the AML Management Software. (Host commands ROSO and HOLD or DAS command Robhome and DAS shutdown). Select "Shutdown AMU" from the AMU User Interface.

Step 2   Change the name of the file STARTUP.CMD to STARTUP.ORG.

```
C:> move startup.cmd startup.org
```

Step 3   Restart the computer (shutdown and boot).

Step 4   Insert the first diskette of AMU Software into the diskette drive or CD-ROM in the CD-ROM drive.

Step 5   Open an OS/2 window and change to install drive (e.g A:).

Step 6   Type "Install" and press <ENTER>.

Step 7   Select the deinstallation option from the installation menu. Wait until the deinstallation process completes.

3 Update Specialities to AMU 3.02

Some of the special configuration changes must be done by the tool `inipat`

3.1 AMU Configuration

3.1.1 Dual AMU/Dual-DAS

Check and change if necessary the AMU configuration for the correct setting of A02LOCAl and A02BACKUP

```
AMU   A01DESC: AML Management Unit 1
AMU   A01TYPE: A0
AMU   A01CONCOORD: 30999021
AMU   A01EXTERN: A01
AMU   A01LOCAL: A01
AMU   A01BACKUP: ___
AMU   A01OPTIONS: L
AMU   A02DESC: AML Management Unit 2
AMU   A02TYPE: A0
AMU   A02CONCOORD: 13632045
AMU   A02EXTERN: A02
AMU   A02LOCAL: A02
AMU   A02BACKUP: ___
AMU   A02OPTIONS: L
AMU   NUMOF: 2
AMU   ALL: A01 A02
```

Check in the Configuration the used TCP/IP ports (Dual-DAS used port 5000 in default for communication, but this value is changeable in \DAS\etc\config

3.1.2   Drive Cleaning

- Activate for Drive Cleaning from the AMU the CLM and DIM in the configuration.

  `patini PROC KRNLOAD "UPM ARC HOC BUD CLM DIM"`
- Configure the drive cleaning in the Graphical Configuration for each drive
- Check the lines between Host and drives, only Host with a connection get a notification for the cleaning
- Enter the clean pool data in the Cleanpool Configuration.
- Remove the drive cleaning from DAS if available (c:\das\etc\config)
- Remove the drive cleaning from HACC/MVS, if available (HACPARM statement CLEAN=AMU and **DELETE** the Clean-Volser in the HACC Archive with HAA)
- Insert the Clean Cartridges via the Command Insert Clean
- Update the Use count of already used Clean Cartridges to the actual value in the Clean Pool Management

4   Changes in Version 3.02C

The following problems was corrected in the version 3.02C:

Table 0-1 Changes in Version 3.02C

Failure/Ticket Number	Problem Decription
PR 030	Teach command with option 1N or 2N produced a KRN trap
PR 017 (19990621_1)	Wrong response im AML/2 command format of a insert request from HACC/MVS
PTS 004	Client cabatibility
PTS 001: (19990630_1)	SWIT-Info will now generated from KrnSWIT-Modul (not in the Rte, because the command is not allowed for requester) A switch command from a Host with not allowed switching deleted all commands from the AMU queue and from the Clean-Manager Hashtable.
PTS 002: (19990630_2)	If the problem box is full and cartridge in gripper, now the related robot will be moved home and set offline
PTS 003:	Commands, which are canceled because command lock will now also deleted from the Queue.

5 Changes in Version 3.02

5.1 Insert/Eject Behaviour for HACC/MVS

The new behaviour are for

- the using of the Clean cartridge insert and eject also for only HACC ⁄ MVS archives
- prevent mechanical touches, if the Eject area is full
- optimize the the duration of the prevent the carousel effect.

In the configuration will no longer used Logical ranges from type HACC-Dynamic, all compartments now from type AMU-Dynamic or Foreign.

After opening the Insert ⁄ Eject unit (remove magazines from the position) and closing the Insert ⁄ Eject unit, the robot checks all compartments from type AMU-Dynamic. In this time, all not yet checked compartments can not be used. For the operations are no changes, the operator can use the system (commands etc.) like before.

5.2 General Using of Insert/Eject unit

AMU 3.02 allowed the mount of cartridges direct from the Insert ⁄ Eject unit.

Attention

Make sure that you not lieve Cartridges in the Insert/Eject unit after the Eject, if the cartridge should not used longer in the system. After a Eject (normal or total) the cartridge is locked in the Insert/Eject unit until:

- **the insert/eject unit opened and closed by the operator and the cartridge was not removed from the magazin/slot.**
- **the host command Search (SCH) was sended to the compartment with the cartridge.**

´The AMU sended now notifications to all hosts, if a data cartridge was successful ejected. (NTFY1300)

5.3   Command Locking for DAS

In a Mixed Host environment are a command control neccessary.

In AMU 3.02 can be locked commands from the Distributed AML-Server. Therfore are the configuration file rqmcom.txt in the AMU directory.

- Each line in the file contained one command.
- Comment lines can be in the file with a # on the begin of a line.
- A line with NTFY are used for the Notifications, which should not sended to DAS

Example:

```
# This file contains all forbidden commands for RQM
# which can not be defined during configuration process.
# Here could be placed all commands, which RQM should not execute.
# BCON, BCOF, HOME and UPDT are checked for the whole system
# regardless on options, e.g. BCON 1 or BCOF 1 will be forbidden
# for robot1 and robot2 (if any).
KEEP
SWIT
NTFY 1299
NTFY 1300
STAT R1
```

Please check the using of command locking with ADIC/GRAU or your Service parner, before you use this feature in production.

5.4   Configuration Backup

AMU provide a menu entry (file backup) in the service menu which does start a command file which might be also written in REXX in a command shell window. The name of the command file can be able to be defined/ changed in the `Process Configuration` dialog and be saved in AmuConf.INI. In the definition you have to specify the filename with the complete path (e.g. `c:\amu\amusave.cmd`)

The command file itself can be customized by the service personnel.
A example is part of the AMU installation and is named `AMUsave.cmd`.

5.5   External AMU-Log

The new program `AmuLog.exe` is an executable which can be run in an OS/2 command shell, which writes all current AMU log entries to the standard output. (This program is different from the version was previous delivered with the DAS and has no parameter and options.)

So users of remote shell to the AMU computer can get the AMU Log to their computer and to their standard output online. Having this, it is possible for the customers to install filters, which filter out messages and initiate actions.

5.6 Support of new Boxes for AIT

For the 8mm cartridges (Exabyte or AIT) there are now supported new boxes. For a new installation, you have to use the command script 8mm_new.cmd.
After the installation, during each software update will used this new configuration.

Attention

AMU do not allowed a mix between old and new boxes for 8 mm.

5.7 Dynamic Configuration 3490/3590

Now are possible to use the Media-Type C0 (3480/90) also for the Configuration with 3590 (Magstar) systems.

Please configure alle Towers, Linear Racks and I/O-units for using 3590 with C0 (3480/90).

Attention

The user of the archive is resonsible for the correct assignment between the cartridge type and the drive type for the mount of a 3490 cartridge. The AMU can not check the difference of this 2 medias.

5.8 Converting Errorcodes

The Errorcodes in the ABBA/1-format are now no longer in the file KrnA1Err.INI (binary, real OS/2 Ini file) Now the errorcodes are used from a ASCII file. It contains a conversion table to convert A2 errocodes to the errorcodes used in A1 command format (Nxxx).

5.9 Reducing internal proccess load

The internal number of events in the Dismount Manger is now reduced, to reduce the process load. There are now the time settings for dismount rounded up or down to 3 seconds.

5.10 Extention of AML/J parameters

The number of parameters, wich are down- and uploaded with PMAINT are extended. Now will also a set pf Q-variables saved.

5.11 DBConvert for POOL table

Now will also the previous used POOL table (Scratch volser management in the DAS) converted to the database of the AMU 3.0x.

Information

This table contained only the volser, but not yet the basic information about the pool. You have to enter this information in the Window Scratch Pool Management in the Administration menu.

5.12 Clean Manager

- For multi client evironments the AMU takesover responsibility of drive cleaning.
  - Cleaning can be configured for each drive separate.
  - The `Clean Pools` can be managed by a special dialog window in AMU.
  - The drives are locked by the Clean Manager during the cleaning operation, a mount during the cleaning will caneled.
  - All related parameters may be changed in the drive dialog of graphical configuration.
  - Details about cleaning are described in the "AMU Reference Guide".

5.13 Dismount Manager

- The robot will no longer wait in front of drives because of long rewind times. The AMU organizes the repeats of failed dismount actions.
- There are no more (only less) wait times for the robot in front of a drives. Other commands can be performed while the drive rewinds and ejects. So the daily peformance is improved at all libraries driven by clients which have no knowledge about the media position in the drive. This clients send a dismount command to the library at the same time they send the dismount to the drive.
- But also for clients which send the dismount to the library after the media was ejected by the drive there is a improvement: If a drive needs physically more time to eject this behaviour can be „tuned" by the Dismount and Eject Time parameters for this drive. If that still fails, the Dismount Manager does an automatic retry. If this retry (done in definable time intervals) fails to the command is responded negative.
- All related parameters may be changed in the drive dialog of graphical configuration.

5.14 Multihost Environment Extensions

5.14.1 Router - RTE.EXE
- Commands will always come to the right (active) AMU even if they were sent to the passive one. Answers are returned through the path they came in. When this path is lost a secondary path will be used. Answers that could not be sent due to communication errors are no longer lost, if one communication line is down.
- The commands ACOM and SWITCH will not routed.

5.14.2 Command exclusion
- In some environments it is necessary to exclude some commands for different hosts, so that for example only on host is able to switch between the AMUs.The host dialog in the graphical configuration provides a new subdialog to configure the commands which shall not be possible (which are excluded) for that host.

5.14.3 New features in Dual AMU
- Switching the ADS is no longer depended on a ROSA command. There is a new command SWITCH. The Switch takes care of processes that are not finished and garantees a complete execution. The exchange of the Controllers can be done without a interuption of the command execution. Asynchronous messages to all hosts in the environment when a Switch is being processed.

5.14.4 Multihost HICAP support
- Variable usage of the HICAP as a normal insert/eject facility with insert and eject commands and also as a facility that allows immediate Mount/Dismount activities. (HICAP II)
- New command for HACC/MVS INC/INV with option " U" that allows an immediate update of a postion after an inventory (without extra download)

5.15 New Commands
- SWIT (A1-format and A2 format) Switch AMU
- LOCK (A1-format and A2 format)
- MOCLIT (A1-format and A2 format) Mount CLEAN
- EJTC (A1-format and A2 format) Eject Clean Cartridge
- INSC (A1-format and A2 format) Insert Clean Cartridge

5.16   Barcode Reading Managment

- The new version provides to switch the Barcode Reading on an off for each single host.
- Also it is possible to specify set a flag in each command to specify Barcode reading on/off.

5.17   New Logging in AMU

Logfiles are ASCII-Files now. Conversion of Logfiles is no longer necessary. Current logfile can be copied (using log2asc). Additional processes can look at the current log which is necessary for any remote control. (telnet)A pleasant sideeffect is that the size of the new log files is only a third of the old ones. That means, that there will remain three times more logfiles on your system, which might be useful to detect the reasons of strange situations.

5.18   Changes AMU User Interface

In the past the number of functions provided has grown. Now a new menu structure takes that into account.

Figure 5-1: Taskbar "AMU V03.02"

5.18.1   New access rights

There are four groups of functions:

- Functions always accessible: Log, Trace, Archive Requests, Shutdown, Edit functions
- **Operator**: Manual Mode and Disaster Recovery
- **Administrator**: Graphical Configuration, Process Configuration, Archive Management, Clean and Scratch Pool Management.
- **Supervisor:** Access to all commands, Teaching, Test Mode, Robot Managment

All passwords can be changed by the Administrator in the `Process Configuration` dialog.

The Disaster Recovery can be protected by a separate password. If none is defined. it is only protected by the operator password via the operator menu.
Default passwords are: „Operator", „Administrator", „Supervisor". The Disaster Recovery has no default password.

5.18.2   Clean Pool Administration

The Clean Pool Administration window provides full acces to all data of clean pools.

Clean pools can be selected to show their values. Also the volsers assigned to the selected pool are shown. The cleaning related data of each volser can be viewed.

It is also possible to add and delete clean pools and add or delete clean volsers to a pool.

5.18.3   Scratch Pool Administration

Like the Clean Pool Administration the Scratch Pool Administration pro-
vides full access to scratch pool related data.

5.18.4   New Command: Insert Clean cartridge

For easy operation in managing number of clean cartridges it is possible
to insert clean cartridges into a clean pool. The operator only needs to sel-
ect a logical range for insert, put the cleancartridges there, close the door
and invoke the Insert Clean Dialog, where he specifies the Logical Range
and the CleanPool where the cartdridges have to go.

5.18.5   New Command: Eject Clean Cartridge

Like the Insert Clean Cartridge it is possible to specify the CleanPool and
a Logical Range to get all worn out clean cartridges. If no CleanPool is
given all worn out cleancartridges which fit to the media type of the
Logical Range will be ejected.

5.18.6   New Command: Mount Clean Cartridge

To do a clean operation directly from the AMU you need only to specify
the drive in the Mount Clean Dialog.

5.18.7   New Drive Configuration

The drive configuration in graphical configuration got a lot more values
to support clean and dismount management and a parameter for the sel-
ection of automatic pressing of the unload button of a drive by the robot
itself.

There are values for each drive like rewind time and eject time, which are
used for computation of time for unload, dismount and cleaning of
drives.

Especially for dismount management there are two values: The wait time
for the first delay between a got dismount command from the host and
the time the robot shall move. This is needed because some client appli-
cations are not able to send the dismount command at the time the cart-
ridge is ejected. So the moveent of the robot must be delayed. The other
value is the number of retries in case of the cartridge has not been got by
the robot.

The clean management has three values: The number of read/write
cycles after which the drive shall be cleaned, the time a cleaning needs (
to have a time for dismount of the cartridge) and the name of the Clean-
Pool from where the cleaning cartridges are taken to clean the drive.

5.18.8   Command exclusion for each Host

This new dialog provides the configuration of commands which shall not be processed by AMU for this host. You can select commands to be excluded into a list for each host and also delete them from the list. That's all

5.18.9   Continuous Send

The Continuous Send dialogs buttons are overhauled.

5.18.10   New Log dialog

The Log dialog was stripped down to a window which only shows the current log entries (up to 2000 lines). Now it is possible to change the windows font.

Like in the old version AMU2.40 you can view the whole todays log using the Log Archive button. An editor provides all the things which are needed to search for specific situations, copy some entries into another file to print it or e-mail it. There is no possibility to change existing log files using this way.

5.19   New behaviour on barcode read error for AML/J

Now you can configure a new behaviour on barcode read errors at mount time:

If a barcode read error occures at a mount, the cartridge will be mounted nevertheless.

To configure that select type S1 instead of type S0 for your scanner in graphical configuration.

6 Detailed AMU process changes

6.1 ARC

- The tables AMU.COORDINATES and AMU.SCOORDINATES got each one attribute (COUNTER) more, to support CleanManager.
- The table AMU.POOL got three new attributes to provide a better backup in DUAL-AMU.
- Some more operations for CleanManagement
- CLM is triggered by changes on drive records.

6.2 ART, LOG, TRC

- Completely overhauled.
- There is a new Log window. See above (Changes AML graphical user interface).

6.3 BUD

- Backup of Pooltable enhanced.
- More robustness on timing problems
- Retry Time set to 30s (10s previous) to prevent from multiple send of the same record.
- After the end of transmission of dirty records KRN is informed, so that it is able to determine the time for a SWITCH normal command.

6.4 CON

- see above (Changes AML graphical user interface).

6.5 DIM

DIM is new (*Dismount Manager* on page 15.)

6.6 HOC

- Support of router

6.7 KRN-L

- Support of CLM
- Support of DIM
- Support of RTE
- A lot of new commands
- Notifications
- New returncodes for SNI
- Media mismatch now detected at an eject command (N209)

New Start options

To support asynchronous communication to DAS and a external Router process, the process KRN may be started with options:

Table 6-1   Startoptions for KRN.EXE

Option	Explanation
/S	Asynchronous messages to the DAS/2
/R	AMU works with Router (RTE.EXE)
/d	Automatic load of all KRN-Traces (function still in AMU 2.40)

6.8 KRN-P

- ADS timeout set to 20s
- More information for robot errors 407,418,420,423
- On a robot error 407 on PUT the cartridge is moved back to source position, if it was not a drive. Otherwise it is transfered to the problem box.
- Timeout problem with scanner fixed (RFA 400 099)
- On saving teach points, not existing devices are deleted from the teach point files.
- A new behaviour was implemented: Mounting although barcode read error. See above „New behaviour on barcode read error for AML/J".

6.9 RFM

- no changes

6.10 RTE

- RTE is new. (see above)

6.11 PMMAINT

- Teach handling was enhanced
- Move axis dialog wa senhanced

6.12 Tools

- Installation Routine: Background Bitmap of OS/2 is set to ADIClogo., Correction in the Backup of the DLL files of the previous installed AMU version.
- DBCONV: update of database to new table structure

6.13   Configuration

New media types (MTYP)

Table 6-**2**   New Media Types

Code for media type in AMU	Media Type
C6	CD-Caddy
V6	DTF Small
V7	DTF Large
V8	BETACAM Small
V9	BETACAM Large

Table 6-**3**   New Device Types

Code for media type in AMU	Media Type
O2	Controller (Scalar 1000)
D4	Drive STK Eagle
D5	Drive BETACAM BTS PBC 2800 P
DH	Drive HP-1300
DM	Drive 310 C11 (AIT)
DS	Drive STK 4890/SNI 3588-GL
DW	SNI HR-650
DX	AKEBONO DTF1242
T6	Small Quadro tower with more capacity

6.14   New Errorcodes

6.14.1   ABBA/1 - new error codes

Information

This change can only be run with robar V2.6B and higher!

Table 6-4   New Error codes

Error Code	Description
N303	volser already mounted on this device
N309	volser already mounted on a different device. The device field (DEV) contains the device, where the volser is actually mounted.
N308	volser ejected
N600	Switch command failed
N602	AMU to AMU communication down
N603	Switch in progress, command not executable
N604	Indistinct command execution, because of AMU switch
N700	No cleaning cartridge available
N701	Clean pool does not exist

And another thing is new: There are a lot of asynchronous notifications which can be sent by AMU to client applications. But what really happens at the operators console depends only on the client application! So that notifications are not described here.

7   Problem Fixes, Change Requests

7.1   Addressed Tickets in AMU 3.02

Table 7-1   Solved problems in AMU 3.02

Ticket number	Problem
ET0000012223 ET0000014243 ET0000013597 ET0000014058	Mismatch in AMU database after a error recovering on a drive and a additional mount of the same volser
ET0000013150	Error in command queue, douple mount are possible in some cases
ET0000013454 ET0000014616	Keep command still in command queue after the error recovery of a previous Mount command with a crash on the drive
ET0000013699	AMU kernel is stopped or robot timeout after the DAS command qvolsrange on system with high work load
ET0000014916	"Sign of life" was only distributed to the active AMU. Now both AMU computers get this information in case of Dual AMU.
ET0000014920	Shutdown of the passive AMU do not work properly. Only the CON will be stopped with the shutdown.
ET0000014921	Shutdown with A2 command (DAS command killamu) stopped only the Kernel.
ET0000015016∕ ET0000014268	Mismatch in the Kernel of the status of the drive (Mount will canceled with 1083 or N202 drive is not empty) although the database has the status empty.
ET0000015404	Software problem after a previous crash at the Insert∕Eject unit
ET0000018731	Continous send select all possibility required
GR000002681 GR000003836 GR000003943	If the I∕O-unit will be opened during the automatic inventory, the inventory will interrupted and a crash on the I∕O unit arepossible during the next commands.

Table 7-1 Solved problems in AMU 3.02

Ticket number	Problem
INT0001	Routing response to the host has bugs.
INT0002	Routing for VTLS integrated in the router process.
INT0003	ADS defective or not present. Improve startup of Dual AMU
INT0008	HACC/MVS Pass-Through (Update tower coordinate during MV from tower to foreign area).
SNS006	Invalid VSN in 1300 notification
SNS008	Volume mounted from EIF returns to Insert area after a IN command
SNS010	Missing Notification NTFY 1300 after Eject
SNS011	Missing notification NTFY 1300 after EJT
SNS012	N503 and N209 return codes at EJect
SNS013	invalid return code N302 for MOunt from EIF during KEep
SNS014	Invalid return code N302 for EJect for mounted volume
SNS015	Device & media type compatibility check no more performed at MOunt
SNS016	invalid return code N302 for MOunt of EJected volume
SNS020	Volser modified in AMU DB after MO N,N306
ET0000013479	Mixed Archives for 3490- and 3590-cartridges (Media type C0 and C2)
ET0000013488	Reopening of the AMU Log from the view menu
ET0000013750	Communication problem on the AML/2-interface (e.g. LMS)
GR000003621	Crash and Error message N105 after unknown robot error message.
1820	No new logfile created
2100	Change of time table (the time in the AMU-Log is shown in 24-h-notation)

Table 7-1   Solved problems in AMU 3.02

Ticket number	Problem
2243	Slow down of inventory and download
2339	Volser truncated in manual mode dialog
2366	Cleancartridge in dynamic area
2402	Wrong error code to robar
2589	Log stopped
2618	Softwareupdate problem
2627	Support of problembox type P6
2646	Year 2000
2655	Timeout on automatic inventory
2678	Actual logfile not accessible
271	RTHS hanging (the answertime should be configurable up to 20000 ms)
2747	communication breakdown between AMU and Tandem (no more commands are sent after a 'media-mismatch')
2748	Responses sent although communication down
2779	Second mount to DJ-Box fails
2831	Barcode on/off support for DAS
2847	DAS ejected used up cleancartridges always to the logical range E01
2861	Handling of 3490 and magstar in one system
3006	Recovery during double-send improved (here: Crash during MONT causes negativanswer for the following KEEP)
3066 3076	Recovery during double-send improved (here: Crash during insert)

8   Known Bugs and Work Arounds

Table 8-1   Known Bugs and Work arrounds

Ticket number	Problem	Workaround
PR 12	RFM does not overwrite existing files o harddisk	Use another directory on the harddisk
PR 17	Host (HACC/MVS) received a wrong anwer during insert (SCH-command)	Start the command VI after the automatic inventory is completed
PTS 05	Log2asc (converting from logs from version 2.40 diplay wrong day and time (localtime/gmtime)	Convert old Logfiles with the software from the old version
PTS 06	Display of available clean and scratch volser corrected	Do not use the values available in the Clean/scratch dialog
PTS07	HOCEHLL works not without RTE	start RTE also in case of a single AMU, if you need EXCP or EHLL communication
ET 28923	Trap of KRN during insert clean from the CON (because of sequence number used twice)	Wait befor you start insert clean the automatic inventory and do not start the command twice from the console (do not use the button reset in the insert clean function).
ET 28852	DAS function qvolsrange produced a ARC trap	Do not use the DAS function qvolsrange and allocv. Restart AMU after the ARC-trap.
ET0000025079	The command INVT in the ABBA/1 format returned for coordinates with ejected volser FREI00 and 0L instead of the volser and *E	Use the command ULC (HACC/MVS command ACC to get informations about the coordinate)
19990505_3	Rho File Manager starts KRN without any options (Problem with DAS or Dual-AMU)	After using RFM, restarts the AMU (shutdown AMU, call AmuStart.cmd)

Table 8-1   Known Bugs and Work arrounds

Ticket number	Problem	Workaround
GR000002985	Same times problem with the transfer of the AMU-CONF.INI with 'BUD control	Use in this case ftp or a floppy
GR000004213	If on a Dual-AMU system are difference in the database index the update of the other places are stopped	copy always the configuration to the other AMU and use the function Update devices on the passive AMU
GR000004295	On AML/2 twin systems the pass trough function does not work	Insert the cartrides always on the robot, where the drive is located for the mount
GR000002878	AMU-Manual Mode also for AML/J	Configure the robot type R0 (AML/2)
SNS007	EJ(T) support for volume mountable from Insert area The AMU 3.0 offers the direct mounting of cartridges from a EIF position or an HICAP door. It is currently not possible to issue an EJ or EJT command for such cartridges. This can cause troubles for the applications, that usually do not know whether a cartridge is in such a position or not. This error will be corrected in the next AMU release.	The consequence in BS2000 is that the MAREN statements //EXPORT-VOLUME and //RETURN-VOLUME will be rejected for volumes that are mountable from an EIF or an HICAP door. Procedures using this statement will go to error. Waiting for the AMU correction, - the removal of such volumes from the BS2000 MAREN catalogue can be done by a manual removal from the EIF or HICAP door (i.e without any //EXPORT-VOLUME //RETURN-VOLUME on BS2000). - it is still possible to insert the cartridges into the robot with IN before using them for mounting. - the use of the MAREN statements //EXPORT-VOLUME and //RETURN-VOLUME on BS2000 is forbidden for volumes in the robot if the volumes are not explicitly inserted with IN.

Table 8-1   Known Bugs and Work arrounds

Ticket number	Problem	Workaround
SNS021	Commands for drives during a AMU generated drive cleaning will be canceled by AMU.	• For compatibility with ROBAR, do not use AMU drive cleaning for drive used by ROBAR. • Set in DAS the option `no_avc`

9   Example of Start Scripts

9.1   Startup.cmd

```
startcm
cmwait  -w 600
cd amu
start AmuStart
start nnlink
```

9.2   c:\AMU\AmuStart.cmd

```
start /C /min "AMU Kernel" krn /S /R
start /C /min "AMU Router" rte
start con /L
exit
```