VVO Software History

VVO 2.40

- Program for vessel linearisation
  We have installed an additional new program: ‘Tank Calculation‘.
  Linearisation curves for inclined cylindrical tanks with torispherical heads e.g. can be calculated with this program.
  The program can also be started directly in VVO via 'Calculation of linearisation curve' under 'Linearisation curve'.
  Therefore the curves with 32 index markers can be saved in the instrument or exported to a text file.

- Import linearisation curve from text file
  VVO can import a VEGA suitable linearisation curve from (nearly) any text file which contains (max 32) index markers for a linearisation and save it in the instruments.

- Adjustment of VEGADIF via VEGACONNECT 2 and VVO 2.40
  Although VEGADIF is an E+H unit it can be completely adjusted via VVO.

- Basic adjustment of HART sensors from other manufacturers.
  All HART instruments can be adjusted in the basic functions by this VVO version together with VEGACONNECT 2. Basic functions are e.g.: measured value indication, simulation, zero/span adjustment, and integration time. Manufacturer or device specific functions (DD) are not supported of course.

- 'Instrument data' – 'Data record' – 'Apply from' (VEGALOG, VEGAMET)
  Parameters already could have been copied from a measurement loop to an other. Now within a measurement loop data can be applied from another measurement loop also.

- Carry out adjustment and offset correction on multiple measurement loops at the same time (VEGALOG, VEGAMET)
  Under the new menu point 'Instrument data' – 'Extended functions' VVO 2.40 offers in conjunction with VEGALOG 571 and VEGACOM 557 with several VEGAMET the possibility to adjust multiple measurement loops or to carry out an offset correction at the same time by pressing just one button.
  It is specially applicable when commissioning big plants when e.g. 30 capacitive sensors are just installed.

- Adjustment of density measurement simplified (VEGALOG, VEGAMET 515).
  The density measurement in m can now also be adjusted.

- Additional print out in tabular form of the adjusted parameters (VEGALOG, VEGAMET)
  Print out function for a better survey e.g. check of an unknown VEGALOG whether the same scaling has been adjusted on several measurement loops.

- 'Configuration' – 'Modify measurement loop' – 'Sensor exchange' (VEGALOG)
  If all 15 channels are occupied with sensors on a VBUS-card the replacement of a defect sensor was very time consuming in the past. The new function however simplifies this procedure and of course all measurement loops using this sensor are updated.

- Print out with own company logo
  The documentation of the instrument adjustments can now be provided with individual logo (BMP file).
  It is of special interest for the engineering companies which adjust our instruments and provide the customer with a documentation where “VEGA” appears quite small.

- Recording of measured values for compact sensors
  Under 'Bits & Bytes' all compact sensors (with the exception of VEGADIF) can save the measured values on the hard drive of the PC.
  New: for compact sensors already selectable under the user level VEGA

- New measurement conditions selectable (series 50)
  With series 50 the following new measuring conditions can now be adjusted by the customer:
  'Standpipe measurement' (VEGAPULS) / ‘Gas layers' (VEGASON): this selection facilitates changes of the pulse velocity
  as well
  'Multiple echoes available' (liquid) / 'Additional echo due to reflections on the vessel wall' (solids): with this selection the first big echo is provided as distance.

- Linearisation sensor display (series 50 VBUS, PULS 81 VBUS)
  The display of a VBUS sensor can also show a linearised volume by saving the entered linearisation curve of the signal conditioning instrument in the VBUS sensor. Selectable under 'Instrument data' – 'Output' – 'Indication of measured values' – 'Sensor display'; for the indication select 'volume percent' or 'scaled'.

- Exchange electronics (ultrasonics, radar)
  In case of repair services the electronics can be exchanged on ultrasonics and radar instruments. All changes necessary (input of serial number, reset etc.) can be carried out in the new menu point 'Services' – 'Exchange electronics'.
  Selectable under user level SERVICE.

- Documentation of echo curves (ultrasonics, radar)
  Do you have problems with an ultrasonic or radar measurement and intend to send one or several echo curves to VEGA Germany?
  We have considerably improved the documentation variety of echo or raw value curves. The curves can be saved in one data base and provided with short notes. Click the new button 'Documentation' in the echo or raw value curve. Each input is automatically saved with date and hour. Under menu point 'Services' – 'Print' / 'View' the data base can be either displayed or printed.

- Flash-EPROM programmable via VVO (series 50)
  All our future instruments of series 50 will be provided with a so-called Flash-EPROM, in which all stored data can be overwritten. For particular reasons it is now possible in conjunction with VVO e.g. to update a VEGAPULS 51 software without exchanging the EPROM. Therefore a (program) file for VEGAPULS has to be saved in the sensor by means of VVO. These files are quite small and can be sent e.g. per email.
  The data are saved under menu point 'Services' – 'Update instrument software'.
  Selectable under user level SERVICE.

VVO 2.50

Release date: 18.12.1998

The following errors have been removed

- New version of the program tank calculation (1.21)
  The program does no longer hang up under Windows 3.1 and 3.11
- Modified background picture for any (non VEGA) HART sensor
  On request of a Gentleman now in red instead of blue
- Error when restoring one sensor out of a backup file which includes several sensors. The false echo memory is restored incorrectly (error always existed).
  This error has been removed.
- After changing from the raw value curve back to the echo curve in the sensor program under VVO 2.40 the echo curve could not be updated anymore.
  This error has been removed.
- In VVO 2.40 no echo records could be printed out without input of a note.
  This error has been removed.
- Program crash under 'Services' – 'Exchange electronics' when clicking on a sensor which was not yet coordinated to a measurement loop (VVO 2.40).
  This error has been removed.
- Capacitive sensor – Adjustment without medium. Input of new values which considerably deviated from the present values could not be carried out (outside valid range error always existed – VVO 2.30).
  An additional error occurred under this menu: it was always possible to select the option 'non conductive' for all electrode types. Only electrodes with concentric tube and electrode no. 18 (EL 29) offer this feature.
  These errors have been removed.
- VVO 2.40 could only recognise max. 16 cards in the VEGALOG carrier with CPU version 1.10 or higher. This error has been removed.

New functions

- Adjustment of VEGAFLEX (sensor program 2.50)
- Changed program entry – VVO mode
  When previously using the modem function of VVO, you had to start VVO as usual, to wait until the connection to VEGA instruments has been checked, then to confirm the message 'Timeout: Please check the connection to the instrument' and then to choose the menu 'Services' – 'Modem'. This function was badly to find and the modem function could also be selected during a direct connection to a VEGA unit.
  We changed the program entry to eliminate this confusion and to enable the integration of the offline programming i.e. the operation with virtual instruments in future versions.
  When starting the program a new window (VVO mode) appears after selection of the user level. At present direct connection and modem are available.
- Under the menu points 'Sensor exchange' and 'Exchange electronics' also the sensor data can be transferred now into the new sensor.
- VVO and the sensor program does only use now the new icons for the sensors as in the pricelist (independent from the model type).

- Switch on/off delay times with switching outputs of signal conditioning instruments are stored now when pressing the button 'Save'. Previously this data was already saved after leaving the window where these times can be entered.
- Changed behaviour of VVO with WHG measurement loops
  (WHG – WasserHaushaltsGesetz, water resources law for Germany)
  – to set an output to an output according to WHG choose now configuration
  – WHG icons as visual intensification
- If the modem hangs up when switching to the sensor program a message box appears which gives the opportunity to re-establish the connection (when selecting the sensor optimisation the independent program SENSOR.EXE is executed).
  Internal only
  Applies for COMTEST.EXE also
- Using a modem the telephone list can be sorted according to company and name now. An update doesn't delete a possibly existing telephone list.
- New and longer timeout for the communication with the instruments.
  (the communication is getting more safety but will cause also longer transmission times and delays and therefore waiting periods on the computer in case of bad communication)
- Some single laptops are not able to provide enough voltage on the COM port to supply a VEGACONNECT where as the function and therefore the transmission can be interfered or even impossible. In these cases VVO shows 'Timeout'.
  If the communication is basically working the message 'Timeout' may appear when transmitting large data, e.g. during loading or saving the linearisation curve, the echo curve etc.
  In these very rare cases a change in the file VVI.INI can help. Below the section [GLOBAL] you can find the following line as from now
  CONNECT_MAX_LEN = 255
  The communication can be improved by changing the number to e.g 150. (The value must be between 80 and 255)
- New possibilities with VEGACOM 557
  When selecting the VEGACOM under 'Configuration' – 'Measuring system' two new buttons appear for the VEGACOM: 'Configuration' and 'Simulation'.

  Under 'Configuration' the current switch positions of VEGACOM are read out and indicated. Further a lot of different switch positions can be simulated. Therefore the manual is very often unnecessary.
  Available with user level SERVICE, in the future with VEGA.

  Under 'Simulation' the VEGACOM can be uncoupled from LOGBUS or DISBUS. When the simulation is running, the last measured values are transmitted to the PLC, the measured values are "frozen". This function is available when connected directly to the VEGACOM only and allows to pull the CPU out of the rack without getting an error message to the PLC.
  Available with user level VEGA and VEGACOM version 2.11.
- Log-file of the communication
  Every communication to VEGA instruments is now logged into a file (COM.LOG). If there are any communication problems this file can help our specialists in the laboratories.
  The file is overwritten with every new start of VVO.
- As from now VVO is delivered on specific yellow diskettes.
  During installation a message appears which points out, that the diskettes must have the distinguishing marks. These marks identify a genuine VVO version
  This appeal should avoid illegal copies.

VVO 2.60

Release date 14.01.2000

General

- From now VVO is only available on CD.
  If the computer on which VVO should be installed, does not have a CD-drive, installation diskettes (6 diskettes) can be made. All necessary instructions you will find in the Help file READ_ME.HLP on the CD.
- VVO is not yet provided with a Help system. However on the CD you find all relevant VEGA documentation (operating instructions, product information etc.) in PDF format (like on the Products CD and in the internet).
- Licence regulations
  A licence agreement must be accepted for the installation of Visual VEGA.

The following errors have been removed

- Max. number of instruments in a database has been increased to 200.
  (see PM-Info 003/2000)
- Max. amplitude difference = 0dB
  The error during loading data from of a sensor (VEGASON, VEGAPULS, VEGAFLEX) detailed described in PM-Info 017/99 is eliminated. If faulty databases are detected when restoring sensor data, VVO will correct these automatically (0dB is set to 20dB).
- Error when using the copy function with sensors
  The restoring of sensor databases caused further errors beside the above described ones (e.g. saving of a wrong offset value). This menu item has been revised completely, partially restricted (e.g. copying only with the same sensor type possible) and tested in detail. When restoring sensor databases or copying databases to other sensors, errors should no longer occur.
  Probable errors are displayed in a window and recorded in the file COM.LOG (e.g. if a parameter of a backup is not supported by the instrument in which it should be saved).
- Restore
  When restoring VBUS signal conditioning instruments, the option 'Do not transfer the serial numbers of the VBUS-sensors' was available in the past. This function was faulty. This option is no longer available; VBUS sensors must always be applied.
- For the electronics exchange, the function existed where the data of the sensor could be immediately saved again in the sensor without using the functions 'Restore'. Also this caused errors – therefore in the revised version, the restore function is no longer available.
- Loading of the peak values
  The peak values were only loaded if there was no database available on the PC.
  VVO 2.60 updates the peak values on the PC with every new connection.
- When loading the data of a VBUS sensor via a signal conditioning instrument, the linearisation curve was not loaded in the sensor.

- Echo recordings for displaying and printing could not be loaded directly from drive a:.
- Echo recordings from other countries, recorded under different regional settings (other decimal point), were displayed incorrectly on e.g. a German computer.
- Simulation of the inputs or outputs on the VEGALOG cards (from user level Service)
  When switching on the simulation, the value jumped to 0. Now the current value is taken over as start value.
- VVO-Viewer
  The additional program VVO-Viewer for VVO databases had problems to display sensor databases with no sensor TAG.

New functions

- Adjustment of VEGA Profibus PA sensors (VEGACAP, D-series, VEGAPULS, VEGASON, VEGAFLEX, VEGABAR) via the Profibus DP-cards of Messrs. Softing.
  Adjustment of PA sensors of other manufacturers is not possible
- Adjustment of VEGASCAN 850
  (incl. software configuration of the communication card)
- Adjustment of VEGAPULS series 40 prepared
  (e.g. modified background pictures)
- Adjustment of VEGASON 54 - 56 prepared
- Adjustment of VEGABAR series 40
  (e.g. modified background pictures)
- HART Multidrop
  HART sensors can be switched over to Multidrop and VVO can be used via VEGACONNECT on HART Multidrop.
- HART communication
  It is only possible to use two handhelds at the same time on one HART cable (e.g. VVO via PC and a handheld), when they are working in different modes. VVO operates default in mode 'Primary Master', but now, if necessary, can be switched over to ‘Secondary Master’ under 'Configuration' – 'Program' – 'Communication'.
- Password function
  VVO supports passwords for VVO and Visual VEGA access in VEGALOG 571 CPU, VEGACOM 557 and VEGASCAN 850.
  Due to this new function, the column 'Password' was deleted in the telephone list (modem mode).
- Restore sensors
  When restoring sensors two messages appear. One is, if also the sensor TAG should be restored (VEGASON, VEGAPULS, VEGAFLEX), the other, if the false echo data should be also applied from the backup. This item is only available for VEGASON and VEGAPULS, as it is no longer possible to restore the empty vessel profile for VEGAFLEX.
- Editing of the linearisation curve
  As already included in all other instruments, the current measured value in percent will not also be displayed for VEGADIF and VEGACAP when editing the linearisation curve.

- Instruments with serial number 0
  Sometimes it happens, that an instrument delivers the serial number 0. This invalid value cannot be processed by VVO. In this case a window is displayed in which a valid serial number can be entered which is then saved in the instrument.
- When loading and saving data in signal conditioning instruments, the transmission status is shown in addition (e.g. ‘Loading linearisation curve 2’). This transmission is additionally recorded in file COM.LOG. This file is in the VVO directory and is overwritten every time VVO is started.
- Transmission of failure messages via VEGACOM 557 to PLC/DCS
  From now this new function is available under 'Instrument data' – 'Parameter adjustment' – 'Outputs' – 'Display of measured value' – 'PC/DCS' (with VEGALOG 571 CPU version 1.12 or higher)
- Density measurement
  For applications where a density could be provided, the parameter ‘scaled’ must be selected under outputs. The text had been modified to ‘Density’.
- Relay outputs of a VBUS temperature measurement loop can now be adjusted in °C and Kelvin.
- Normally VEGAMET 514V creates automatically beside a level measurement loop also a temperature measurement loop (as long as the connected VBUS sensor delivers a temperature value).
  In fast applications, where the temperature is not required, the transmission of the temperature value can be skipped – therefore the temperature measurement loop can be deleted via VVO (not available via VEGAMET keyboard)
- VEGAMET with reduced menu
  VVO now always shows all parameters, even if the reduced menu is adjusted on VEGAMET.
- Measurement in a standpipe
  The adjustment of the tube diameter for measurements in a standpipe may adjusted in Inches, when the sensor is adjusted in Feet.
- Tank calculation program 'Tank Calculation'
  The specific tank data for calculation of a linearisation curve can now be saved in a file. It is also possible to print and reload this data.

Program internal information

- The Visual Basic project VVO is too comprehensive.
  The printing function in VVO is now no longer part of VVO.EXE, but is executed via an own EXE file (VVOPRN.EXE)
- The texts in COMTEST are now in English.

VVO 2.70

Release date 10.07.2000

General

- For users that want to apply VVO in conjunction with Profibus cards, a PDF file called "*pbinst_d.pdf*" or "*pbinst_e.pdf*" is available in German and English language in the directory \Profibus_Drivers on the VVO CD. This file contains important information for the setup of VVO with different Profibus cards.
- The Profibus drivers for Softing cards necessary for VVO, are available on the VVO CD under \Profibus_Drivers\Win9x or \Profibus_Drivers\WinNT.
- The Profibus drivers for Siemens cards necessary for VVO, are chargeable and must be ordered separately from Siemens.
  For CP5412(A2) the driver DP-5412 V5.0 order no. 6GK1702-5DW50-3AA0 is required.
  For CP5511 and CP5611 driver SOFTNET-DP V5.0 order no. 6GK1704-5DW50-3AA0 is required.
- When operating with VVO on the Profibus, warnings are displayed before the connection will be established.

The following errors have been removed

- VVO detects now also VEGA PA sensors even if there are Profibus sensors from other manufactures connected on the same PA net which do not support the extended Profibus protocol (DP/V1).
- The documentation function (view, print) now also functions for databases made with older VVO versions (< 2.40).
- Problems during operation via modem with PC (clocking frequency > 500MHz) are solved.
- The function “Restore configuration“ for VEGAPULS 50 sensors and all VBUS sensors of VEGASON series 50 / VEGAFLEX series 50 with Ex approval can be used again.
- Error message “Path not found“ when starting the sensor program under Windows 3.11 does not appear any longer.
- When loading databases, errors are no longer displayed in form of a warning (which must be acknowledge manually), but only saved in the protocol file COM.LOG or COMS.LOG.

New functions

- VEGAPULS 40
  Complete support of the new instrument series VEGAPULS 40

- Beside the previously supported Softing cards, the adjustment of VEGA Profibus PA sensors (VEGACAP, D-series, VEGAPULS, VEGASON, VEGAFLEX, VEGABAR) is now also possible via the below Profibus DP cards from SIEMENS:
  - CP5511 (PCMCIA)
  - CP5611 (PCI)
  - CP5412(A2) (ISA)

  Adjustment of PA sensors other than VEGA is still not possible.
- Adjustment of VEGACOM 557 with additional print Profibus DP (Id. No. 2.23690) is supported for the below Profibus DP cards from Softing:
  - PB-IF-03 (ISA or PCI)
  - PB-IF-1MS (PCI)
  - PROFIcard (PCMCIA)

  Windows NT is not supported. Adjustment via VEGACOM 557 with Profibus DP cards from SIEMENS is also not possible.

Program internal

- The operation of VVO with PA sensors via Profibus with Softing cards has been changed completely. Accesses made with VVO 2.60 directly to the hardware, are now made via an official driver.
  Advantage: Accesses are independent of the operating system, therefore also Windows NT is now supported.
  Disadvantage: Nevertheless, the new Softing drivers must be installed for VVO 2.70 on PCs, with which PA sensors have been used already under VVO 2.60.

VVO 2.71

Release date 17.07.2000

The following listed errors are mainly of interest for the service.
Via the VEGA Homepage an update may be downloaded free of charge, which updates VVO 2.70 to 2.71.

The following errors have been removed

- Restoring of older sensor data bases (created with VVO 2.50 or older) was not possible. When trying an error message appeared.
- VVO 2.70 can not print the laboratory parameters of older sensor data bases (created with VVO 2.50 or older).

Update to 2.71

Release date 17.07.2000

The file VVO_UD01.EXE is available to be downloaded from the VEGA Homepage free of charge. This file is a self-extracting file which extracts the following files:

VVOUD271.EXE	self-extracting file
VVOUD271.TXT	Description of the update

Copy the file VVOUD271.EXE into the VVO directory where VVO 2.70 is already installed. This file extracts the files VVO.EXE and VVOPRN.EXE and overwrites the already existing versions from VVO 2.70. Entries in the start menu and other links have to be changed manually.

VVO 2.71 Bergan

Release date 17.07.2000

Special OEM Version for company BERGAN, Breeze, Florida (USA). This version is identical with VVO 2.71
Name of the EXE file:VVOBERG.EXE

New function

- During start up a splash screen with a info picture of Bergan appears

Version 2.80

Publication date 01.06.2001

General

- The list with the available Profibus drivers (for Softing cards) on the VVO-CD was extended. The following drivers are now available:
  - Win 95 or 98 and ME
  - Win NT
  - Win 2000
- The adjustment of VEGACOM 557 with VVO via Profibus DP is no longer supported.
- The VVO-CD includes the up-to-date operating instructions in the languages German, English, Spanish, French, Italian, Portuguese and Russian.

New functions

- VEGACOM 558
  Complete support of VEGACOM 558 as Gateway to Ethernet.

- VEGALOG 571 EP
  Complete support of VEGALOG input card VEGALOG 571 EP for operation of up to 15 VEGA PA sensors.
- VEGACONNECT 3
  Complete support of CONNECT 3 for direct connection via the I²C bus to all sensor types with I²C bus interface. This concerns mainly all versions of instrument series 40 and 50 (HART, VBUS, PA).
- Extension of the instruments with WHG approval
  Now VVO supports beside the previous WHG measurement loops also:
  - 4-20mA WHG measurement loops
  - Radar – WHG measurement loops (PA and VBUS)
  - WHG measurement loops for level detection (capacitive and vibration)
- Profibus PA with PA link (Siemens)
  Support of Profibus PA sensors coupled via a PA link to the Profibus DP.
- Profibus PA
  Various optimisations for operation with PA sensors, furthermore optimised diagnosis help (e.g. live list etc.) and extensions in the documentation function.
- VEGAPULS 45
  Extended support of instrument series 40 by type VEGAPULS 45
- VVO via Ethernet
  The communication possibilities of VVO had been extended by the version Ethernet. This concerns the direct connection of VVO to VEGACOM 558 as well as the connection to the PC interface of the VEGALOG 571 CPU or VEGACOM 557 via an Ethernet converter of W&T.
- Documentation as PDF file
  Extension of the documentation function of VVO by the possibility „Print in PDF file“. With this, you can comfortably open the documentations with the Acrobat-Reader or printed independent from VVO.

Program-internal

- With the existing version of VVO operation under Windows 3.1 is no longer possible. First of all, VVO 2.80 was created as 32Bit version and can therefore work only with the 32Bit Windows versions (Windows 95, Windows NT, Windows 2000, Windows ME).
- In the existing version, VVO requires obligatory the software component DCOM95 for Windows. This component is part of the standard installation with the latest Windows versions (win98, winNT, winME, win2000). win95 installs this component automatically with the installation of the Internet-explorer from version 4.01 or an Office package. If, nevertheless, this component is not available on your computer, you have the possibility to download it from the VEGA homepage.

Version 2.81

Publication date 01.03.2002

A free of charge update can be downloaded from the VEGA homepage, converting an installed VVO 2.80 to 2.81.

General

- The VVO-CD contains a complete description for all instruments adjustment with VVO in form of a PDF file. The user can determine during the installation of VVO, if the PDF file should be transferred to the computer. If the transmission is activated, the PDF file can be called like a help system under VVO.
- The VVO-CD does no longer contain operating instructions.
- For the first time, version 2.81 offers the possibility of software registration. In future, registered customers will automatically receive information on the availability of software updates.

New functions

- VEGACOM 558
  Extended support of VEGACOM 558 as a Gateway to Ethernet.
- VEGALOG 571 EP
  Extended support of the VEGALOG input card VEGALOG 571 EP for operation of up to 15 VEGA PA sensors. In addition, measurement loops with capacitive sensors are now supported.

The following errors had been removed

- Formatting error with print function removed.
- Initialisation error with Siemens Profibus cards removed

Program-internally

- With the existing VVO version the operation under Windows version using Double-Characterset is possible (concerns mainly computers in Asia, e.g. China, Japan, etc.).

Update to 2.81

Publication date 01.03.2002

The file VVO_UD02.EXE is available as a free of charge download from the VEGA homepage. This is a self-unpacking file packing the following files into the directory C:\VEGA\VVO_UPDT\:

SETUP.EXE
SETUP.LST

VVOU1.CAB
VVOU2.CAB
VVOU3.CAB
VVOU4.CAB
VVOU5.CAB

Start the file SETUP.EXE and on request state the search path of the existing VVO 2.80.

Note: The installation of the VVO manual in form of a PDF file is not offered with the update.

Service Pack 1 for VVO 2.81

Publication date 01.08.2002

Compared to the standard version, only adaptations for computers had been carried in the Service Pack 1 for VVO 2.81 which are operated with the Asiatic Windows version (e.g.: China, Japan, Korea, etc.). This concerns mainly the known problems such as faulty tabular presentations with the documentation function of VVO 2.81.

The file SETUP.EXE is available as free of charge download from the VEGA homepage.

SETUP.EXE takes over the update of the following files:

VVO.EXE
VVOPRN.EXE
SENSOR.EXE

The file SETUP.EXE checks the availability of a VVO 2.81 and only in this case, an installation is possible.

Version 2.82

Publication date 01.02.2006

General

- From now on, version 2.82 is available as free-of-charge download from the VEGA homepage.
- It will be also part of the DTM Collection CD from product version 4/2006

New functions

- WHG measurement loops for VEGALOG can now also be created with plics sensors (concerns all WHG approved plics sensors ProfibusPA)

WHG sensors with EP card:
VEGAFLEX 61, 62, 65
VEGAPULS 61, 62, 63, 65, 66
VEGAPULS 41, 42, 43, 44, 45
VEGAPULS 51, 52, 53, 54, 56
VEGABAR 52, 61, 64, 65, 66, 67

The following errors had been removed

- On Japanese or Chinese operating systems there were problems with the print-out or ”Load echo curves“. Keyword: Double character set (these problems were already removed with 2.81 SP1).

Schiltach, 15. February 2006
Fridolin Faist

Schiltach, 19. February 2002
Fridolin Faist