

Product overview



Factory Integrating Tool

The FIT modules at a glance

Factory Integrating Tool (FIT) is a software package comprising a number of functional modules that the user can put together individually.

Basic software, core modules, additional modules



Basic software

FIT Basic Software contains the memory management tool standard for all modules, an SQL database interface (ORACLE, SQL Server), terminal access programs for max. 512 workstations and a graphical user interface (GUI). The FIT User Management tool is part of the basic software.

The basic software module can never be operated alone, but must always be run in conjunction with one or more of the core modules: Parts Management, Order Management, PERSONNEL Management and Time Data Management. The Workstation Management module is required for the administration of workstations and PDA terminals.



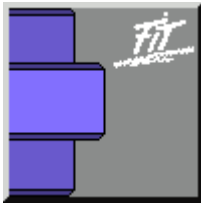
Mask editor

The mask editor included in the FIT Basic program enables user-specific masks to be generated for all database tables.



Workplace administration

This software module contains functions for managing, displaying and administering workplaces and PDA terminals. Cost centres and shift models, for example, are assigned in the Workplace Administration module.



Part Administration

This core module includes functions for administering, displaying and processing data on parts and technology, e.g. for DNC operation. The integrated interface allows the FIT software to be connected to external systems (e.g. NC programming, CAD system, PDM system, QS system).



Order Administration

The Order Administration core module administers, displays and processes order and workflow data (e.g. for order-related plant data collection - PDA). The integrated interface program allows the FIT software to be connected to external systems such as an PPS-/ERP systems, control station, etc.



Project Manufacturing and Engineering

The Project Manufacturing and Engineering product maps order and design input in the form of planning charts, order/project flowcharts and capacity utilisation diagrams. The Control module is based on Microsoft MS-Project, FIT planning macros and the FIT communication interface "Db-Gate".



Time Data Administration

The Time Data Administration module allows wage compensation-relevant order and time data (transaction data) to be captured, displayed and processed (non-individual related or related to specific persons).



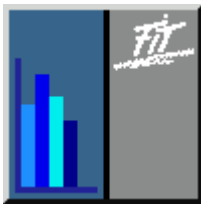
Personnel Data Administration

An excerpt from the Personnel master data is archived in the Personnel Data Administration module. Individual times and unit quantities can be entered in conjunction with the Time Administration tool. The appropriate Personnel data interface enables Personnel master data and account balances to be exchanged with a centralised payroll accounting system (PAS).



Report Generator

The report generator lets the user display, compress and delete local datasets, such as cost-centre-related work times, within a certain time period. The report generator enables time data to be split and aggregated – the results of the reports can be displayed and subsequently edited in programs like EXCEL[®] or Crystal Reports.



Statistics module

The FIT Statistics module lets you generate all manner of statistical analyses and views of the connected workstations, e.g. machine utilisation, malfunction analyses, shift comparisons ...

These statistical analyses are generated using MS-Excel[®] and special statistics macros from FIT. The FIT Statistics module requires the following products:

MS-Excel[®], FIT Db-Gate and FIT Time Data Administration.



FIT Editor

The FIT Editor is a user-friendly text editing tool with special functions for processing and comparing NC data and FIT configuration files.

FIT-MI (Machine Interface)

Machine interface (serial or LAN) via a standard Web browser
The interface can be individually configured for each machine.

FIT-HI (Human Interface)

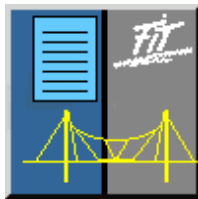


Simple user interface for the machine operator via web browser interface for DNC operation, requesting and displaying parts data such as NC programs, files, graphics, drawings, 3D models, etc.



Workplace Overview

The Workplace Overview module makes it possible to represent the status of the individual workplaces online. The workplace overview is designed as a client, thus enabling workplace status queries to be initiated from any PC integrated on the network (Windows 98, NT, 2000 and XP).



Db - Gate

Db-Gate makes available services to enable the use of both OLE objects and the functions required to process them from OLE-compatible external applications, e.g.: EXCEL, Project, Word



Mirroring Licence

The Mirroring Licence module serves to ensure failure safety by mirroring the FIT systems. Operational and configuration data are continuously duplicated on a second computer that can seamlessly assume the functions of the main computer in the event of a temporary crash.



FIT Documentation

FIT documentation is available on the internet in an HTML version. That means the documentation can be made available online as part of the corporate intranet system and – in conjunction with a www frontend – can be edited to do things like create company-internal training materials.

Hardware / System requirements

FIT software modules are available for the following computers and operating systems:

- ◆ HP CPU with operating system HP-UX (from V10.x)
- ◆ PCs running Microsoft Windows® 2000/2003 or XP.

The individual hardware components can be adapted to the particular area of use (e.g. in light of a particular type of security). The software has also been designed to allow peripherals to be hooked up as required (e.g. GUIs or alphanumeric monitors, barcode readers and magnetic card input devices).

Preinstalled hardware can be supplemented with additional components and the software expanded by adding more core or additional modules – at any time with little effort and expense.

Minimum Hardware Requirements

Computer system

The following minimum hardware requirements should be met in order to run FIT software:

- ◆ when using workstations:

1 GB RAM,
20 GB hard drive,
CD-ROM drive,
Ethernet interface

- ◆ when using PCs:

1 GB RAM,
20 GB hard drive,
CD-ROM drive,
optional DAT drive for data backup,
Ethernet interface

The above computer specifications are the minimum configurations. The size of the hard drive must be determined according to the required data volumes. You will need to install around 2MB of additional RAM per PDA terminal and around 10MB extra RAM per active user interface.

Networks

The FIT modules support the following standards for connecting to the existing IT environment:

- ◆ Standard host protocols are used for connecting overlapping applications.
- ◆ The PDA terminals are connected to the computer via Ethernet network (IEEE 802.3).
- ◆ Data exchange occurs within secure data transport protocols featuring iteration factors.
- ◆ Standard commercial cabling based on copper, optical fibre or radio communication can all be deployed as transfer media.

The basic software



The FIT software suite comprises a client/server architecture and a range of functional modules that users can mix and match themselves to solve various problems. The FIT Basic Software module contains the memory management tool standard for all modules, a user-data administration tool, an SQL database interface (ORACLE, SQL Server) and terminal access programs for max. 512 workstations. The PDA terminals are connected to the FIT computer via Ethernet network. The terminal access programs contain drivers for 79700 terminals (an A+B product line) and PC terminals/software (MS Windows 98, NT, 2000, 2003 and XP). The basic software comes with one client as standard.

The general system layout, basic workstation configurations and user privileges administration are all stipulated in the FIT Basic Software.

The basic software cannot be deployed on its own, but must always be used with one or several of the following core modules:

- ◆ Parts Administration for DNC operation
- ◆ Order Administration for order-related PDA
- ◆ Time Data Administration for time recording
- ◆ Human Resource Data Administration for access control

Beyond that, the FIT software package features a series of additional modules that can be combined with the basic software and core modules according to the task at hand.

General functions of FIT Basic Software

User administration

FIT User Administration is used to assign authorisation privileges and display masks to users/user groups. These privileges can be assigned separately for each FIT system area (PDA terminals, workstation data, parts data, order data, time data and PERSONNEL data). The privileges range from a simple display function all the way to edit, create and delete functions.

The user administration tool is only active in conjunction with the GUI (client), whereby the user level applies to the entire data administration system independent of business area.

Display functions by authorised users

With the help of FIT Basic Software, the FIT system can be administered and workstation and configuration data can be called up and modified as required.

Displaying and editing

- ◆ Startup, shutdown and relaunch of the application software
- ◆ Manual activation of data backup
- ◆ Backup and recovery of configuration data
- ◆ System protocol display
- ◆ Administration, activation/deactivation of all workstations, individual workstation groups or individual workstations
- ◆ Displaying and editing of workstation-related memos (e.g. last repair 22.05.1999 – monitor drive motor! – in case of problems please notify 2132)
- ◆ Workstation history view
- ◆ Modification of workstation statuses entered in the FIT system.

Functions without user interaction

Besides the interactive user functions, FIT software also handles tasks related to automatic workstation selection.

- ◆ FIT basic software can both supply information to and delete it from numerous workstations at the same time.
- ◆ Actions are logged in a workstation history as they are completed at a workstation.
- ◆ If a PDA terminal goes down, it is automatically supplied with the operating system, the current configuration and the latest operational data as soon as it is online again in the system.

Configuration of FIT Basic Software

FIT software offers a broad range of options for configuring the system according to your specific requirements.

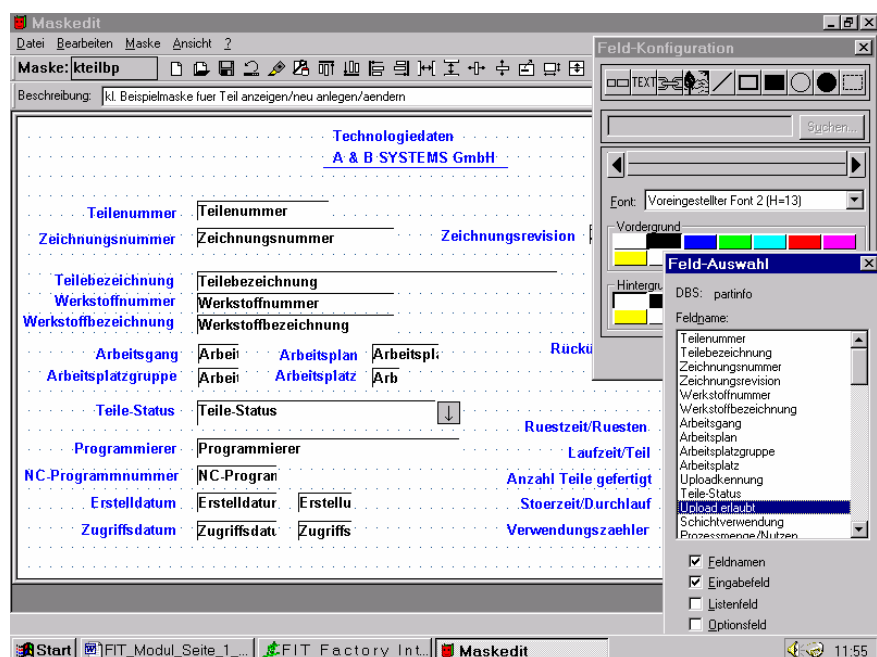
System-wide configuration

FIT Basic Software allows you to:

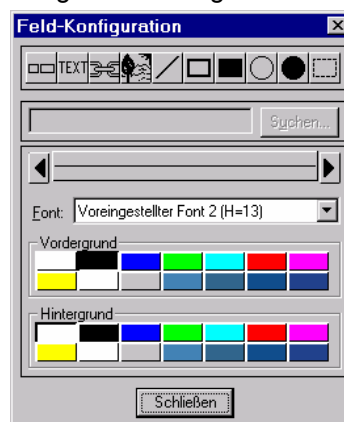
- ◆ Grant access privileges
- ◆ Configure system startup procedures and run them when the system boots
- ◆ Configure general interfaces and system modules
- ◆ Assign parameters to communication modules
- ◆ Define printers and configure them specifically for FIT
- ◆ Determine the type and content of data backup
- ◆ Conduct the general system localisation

FIT Mask Editor

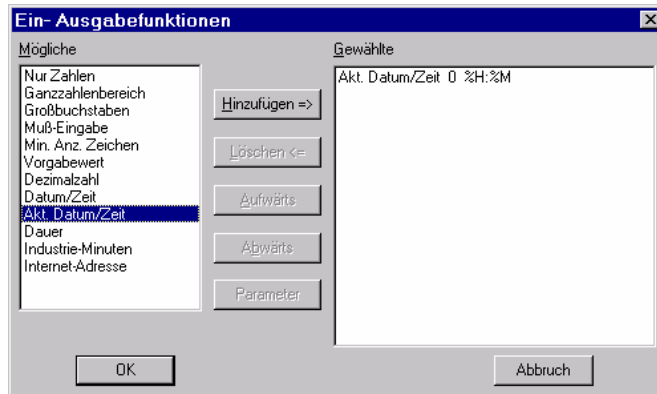
The FIT Mask Editor enables user-specific display masks to be generated for all database tables. The mask layouts as well as the arrangement of the database fields can be freely designed and are easily generated. The desired database fields are entered into the data mask using a drag&drop function.



Characteristics can be assigned to the database fields including: foreground /background colour, font

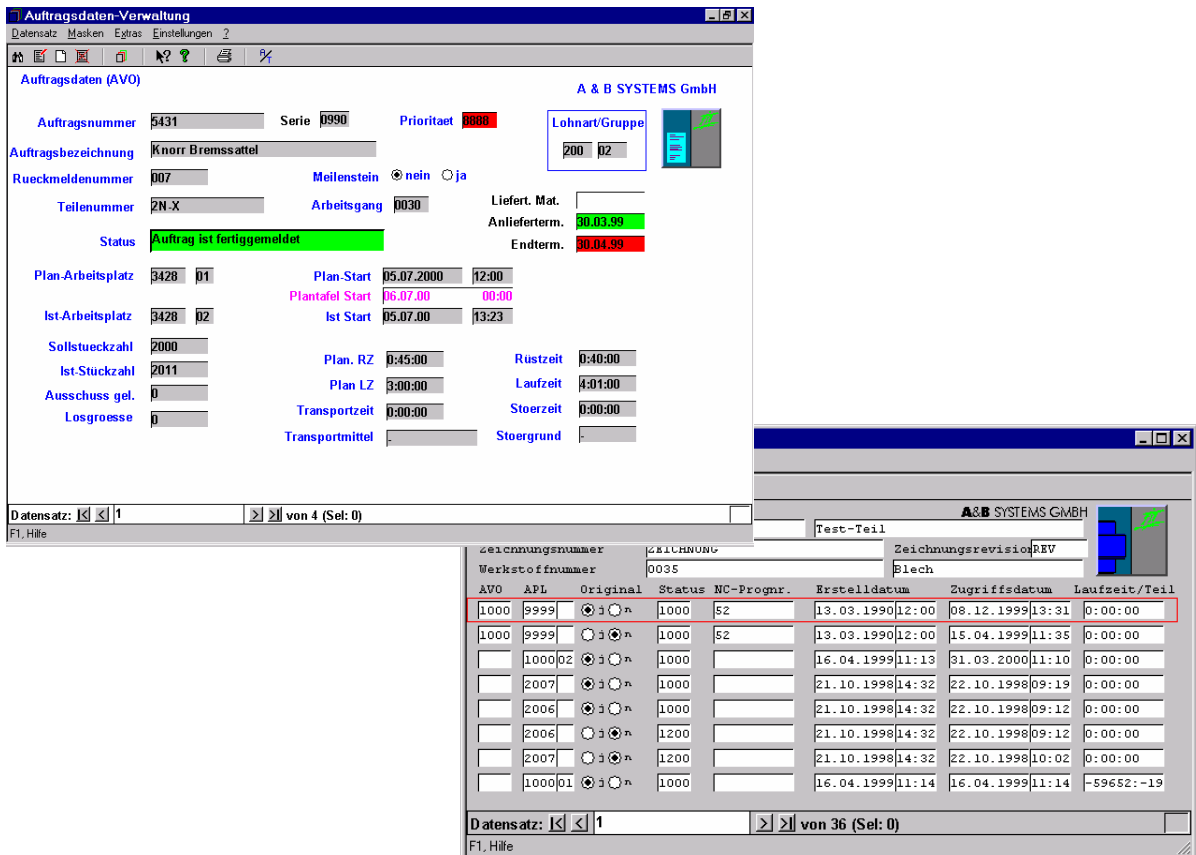


and entry and read-out functions.



The mask editor thus allows individual adaptation and design of the user interfaces.

Example of an order data mask



Workplace Administration



Master data from workplaces and PDA terminals are managed and administered in the Workplace Administration module. The Workplace Administration module serves to capture data related to parts, orders, PERSONNEL and workplaces and, depending on the workplace configuration, to update messages from the function keys and digital inputs. Thus, machine data can be adopted and analysed.

Functional scope of the Workplace Administration module

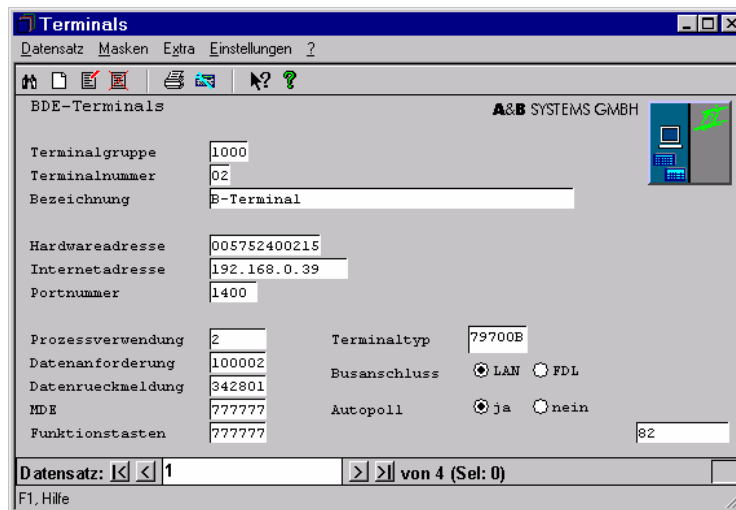
The Workplace Administration tool enables all workplace data to be called up and modified as needed locally, i.e. typically in a factory or cost centre. Master workplace data can be adopted from a centralised location and parameterised and administered in the FIT system for local use.

Displaying and editing

- ◆ Entry, editing, deletion and parameterisation of workstation and PDA terminal master data and functions
- ◆ Display and deletion of workplace history
- ◆ Display of order currently being processed, the technological information used and the logged-in employee
- ◆ Display of the function keys currently being used along with their meaning (e.g. key I pressed waiting for repair).
- ◆ Display of input signals from the PDA terminal if machine data are captured at the workstation. These input signals are displayed as they are interpreted by the system (e.g. input 5 flagged machine on error status)
- ◆ Display of the archived malfunction analysis model with the relevant data that was actually entered (e.g. since 1.3.1999 40 hours electrical malfunction)

◆
Functions without user interaction

- ◆ Logging of all actions completed at a workstation in the form of a workstation history.
- ◆ Integration of user functions via key setting.
 This allows a user app, for example, to be launched from the PDA terminal (repair request).
- ◆ The current status of the workstations (malfunction, what is being processed, ...) is entered and can be displayed.
- ◆ Definition of company-specific functions and processes – e.g. closing any open activities at the end of a shift.



Terminals
 Datensatz Masken Extra Einstellungen ?

BDE-Terminals A&B SYSTEMS GMBH

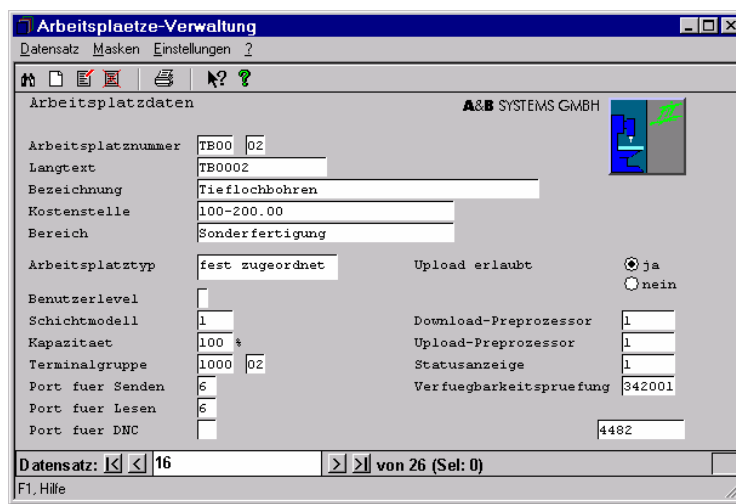
Terminalgruppe: 1000
 Terminalnummer: 02
 Bezeichnung: B-Terminal

Hardwareadresse: 005752400215
 Internetadresse: 192.168.0.39
 Portnummer: 1400

Prozessverwendung: 2
 Datenanforderung: 100002
 Datenrueckmeldung: 342801
 MDE: 777777
 Funktionstasten: 777777

Terminaltyp: 79700B
 Busanschluss: LAN FDL
 Autopoll: ja nein

Datensatz: <|< 1 >|> von 4 (Sel: 0)
 F1, Hilfe



Arbeitsplaetze-Verwaltung
 Datensatz Masken Einstellungen ?

Arbeitsplatzdaten A&B SYSTEMS GMBH

Arbeitsplatznummer: TB00 02
 Langtext: TB0002
 Bezeichnung: Tieflochbohren
 Kostenstelle: 100-200.00
 Bereich: Sonderfertigung

Arbeitsplatztyp: fest zugeordnet
 Upload erlaubt: ja nein

Bemutzerlevel: []
 Schichtmodell: 1
 Kapazitaet: 100 %
 Terminalgruppe: 1000 02
 Port fuer Senden: 6
 Port fuer Lesen: 6
 Port fuer DNC: []

Download-Preprozessor: 1
 Upload-Preprozessor: 1
 Statusanzeige: 1
 Verfuegbarkeitspruefung: 342001

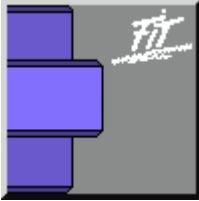
Datensatz: <|< 16 >|> von 26 (Sel: 0)
 F1, Hilfe

Configuration of Workplace Administration module

The following settings and specifications can be executed in the FIT Workplace Administration module:

- ◆ Localisation and labelling of field contents
- ◆ Definition of a valid system-wide malfunction analysis model
- ◆ Workstation group setup
- ◆ Assignment of individual workstations to workstation groups
- ◆ Arrangement of individual workstations according to priority, cost centre and shift model (the latter is only possible in conjunction with Time Data Management module)
- ◆ Mapping of various workstation variations (e.g. tool presets, CNC machine, manual workstation)
- ◆ Allocation of individual workstations to input terminals (512 logical workstations can be distributed to 128 input terminals)
- ◆ Configuration of the deployed PDA terminal types (e.g. PDA terminal, DNC terminal, employee time-data terminals,...), as well as their characteristics in terms of hardware setup and interface specifications (e.g. baud rate, control type, network connection)
- ◆ Definition and parameterisation of data to be transferred to and from machine control (pre-processing)
- ◆ Specification of user dialogs at the individual workstation (e.g. what is being queried by the user, in which sequence and with which boundary values)
- ◆ Configuration and labelling of the function keys (e.g. key I pressed □ machine malfunction)
- ◆ Configuration of errors occurring at a workstation from the error analysis model
- ◆ Configuration and labelling of the digital inputs for capturing machine data (e.g. voltage at inputs 5 and 6 □ mechanical error)
- ◆ Configuration of the production resources required at a workstation (e.g. NC program, tool data, CAD drawings)
- ◆ Allocation of the operating programs to the relevant workstation.

Part Data Administration



This core module includes functions for administering, displaying and processing data on parts and technology, e.g. for DNC operation. The integrated interface allows the FIT software to be connected to external systems (e.g. NC programming, CAD or QS systems).

The Parts Management module administers parts header data (part number, drawing number etc. – max. total of 98 entries) and static technological data (NC program, parts drawings, working papers, quality guidelines, etc. – max. 90 resources in all). Usage instructions and change statuses (e.g. version labels, average setup time and processing time per part) are archived locally and automatically updated if so configured.

In conjunction with FIT Basic Software, this module enables data exchange with machining equipment (DNC operation).

Functional scope of the Part Administration module

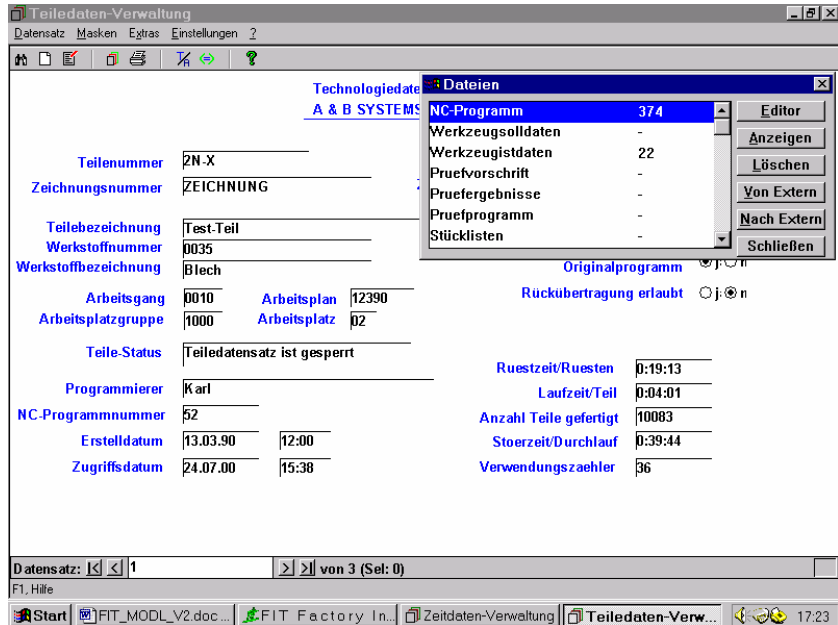
The Part Administration module enables information about products and worksteps to be mapped and edited.

Displaying and editing

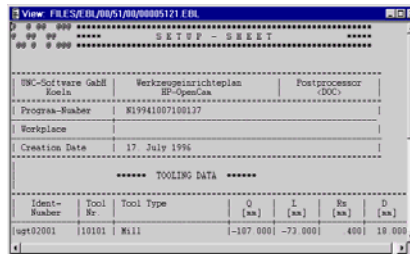
- ◆ Display of all data of a specific parts dataset (justified text)
- ◆ Display of parts-related data (production documents)
- ◆ Comparison of original with optimised versions
- ◆ Display of selected parts in table form
- ◆ Modification of parts header data
- ◆ Editing of parts data files (NC program, etc.)
- ◆ Blocking and releasing of parts data
- ◆ Allocation of parts data to workstations
- ◆ Inputting of new local parts data
- ◆ Deletion of local parts data
- ◆ External transfer and backup of selected parts data

□ .

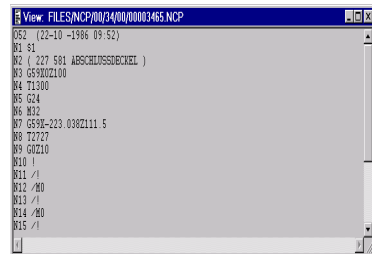
Example of a Part Data Mask



Tooling sheet



NC Program



Part Data Interface

The FIT Parts Data Interface makes it possible to adopt parts data from or transfer them to overlapping systems (e.g. NC programming, CAD and CAQ systems).

The following functions can be activated from an overlapping system:

- ◆ Transfer of new parts data into the FIT database
- ◆ Addition of further parts-related data
- ◆ Modification of existing parts data
- ◆ Deletion of parts data
- ◆ Query of local parts datasets
- ◆ Swap-out of parts datasets from the FIT database.

When swapping in new parts data, they are compared with the local parts dataset.

Configuration of Part Data Administration

The following settings and specifications can be executed in the Parts Data Management module:

- ◆ Adaptation of the descriptors used to the operational terminology (e.g.: parts number → material number)
- ◆ Configuration of administered parts data (NC program, CAD drawings)
- ◆ Configuration of subsystems for displaying, editing and printing
- ◆ Parts data stats stored with readable text
- ◆ Definition of the production resources needed to process a part
- ◆ Configuration of interfaces to overlapping systems (e.g. active, passive, data formats)

Order Data Administration



The Order Data Administration module adopts the individual operations of a production order from overlapping systems (PPS/ERP, control centre, ..) into the FIT database, administers the operations and assigns them to the workplaces for processing. Actual data (number of units, running time,...) are locally inputted and updated and subsequently transferred to the overlapping systems.

As the data is transferred, it is compared against order data already inputted. The order status is determined with the help of a resource definition tool. The sequence of orders for the planning table is determined based on the current machine utilisation level and control data. The orders are assigned to the individual workstations in the determined sequence and can be called up on the PDA terminal by using the "next order" function, for example.

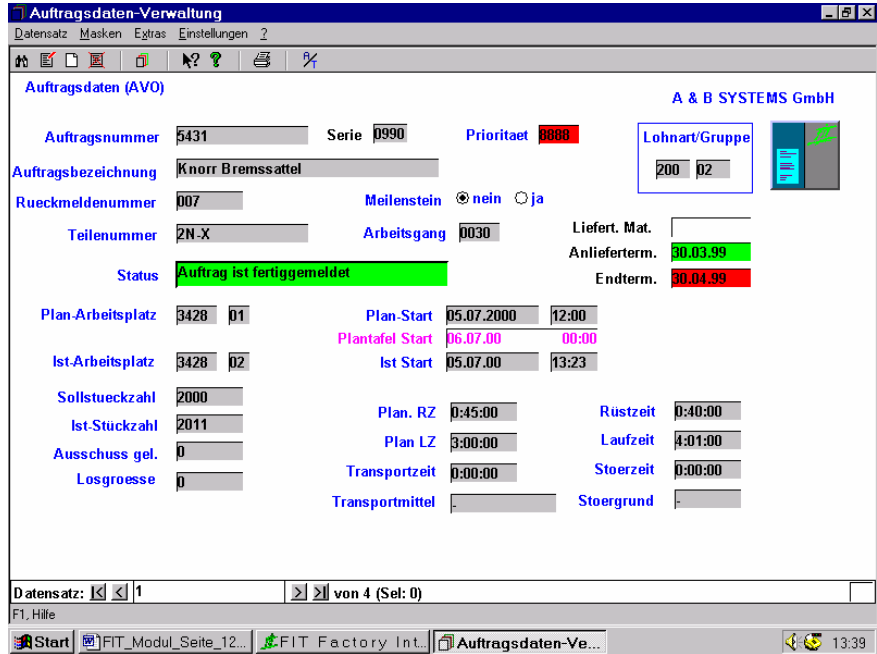
Functional scope of the Order Data Administration module

The Order Data Administration core module enables order data to be displayed and edited on a computer monitor.

Displaying and editing

- ◆ Display of all data of a specific dataset (justified text)
- ◆ Display of orders in table form (e.g. all pending orders)
- ◆ Display of order-related resources (e.g. assembly list)
- ◆ Modification of order data
- ◆ Blocking and releasing of order data
- ◆ Allocation of orders to workstations
- ◆ Inputting and manual splitting of new, local order data
- ◆ Deletion of local order data
- ◆ Modification of order data files (e.g. tool list, ...)
- ◆ Display of the parts dataset referenced by the order
- ◆ External transfer or copying of a selected order dataset.

Example of an order dataset



The screenshot shows the 'Auftragsdaten-Verwaltung' (Order Data Administration) window. The main data fields are as follows:

Field	Value
Auftragsnummer	5431
Serie	0990
Prioritaet	8888
Lohnart/Gruppe	200 02
Auftragsbezeichnung	Knorr Bremsattel
Rueckmeldenummer	007
Meilenstein	<input checked="" type="radio"/> nein <input type="radio"/> ja
Teilenummer	2N-X
Arbeitsgang	0030
Liefert. Mat.	
Anlieferterm.	30.03.99
Status	Auftrag ist fertiggemeldet
Endterm.	30.04.99
Plan-Arbeitsplatz	3428 01
Plan-Start	05.07.2000 12:00
Ist-Arbeitsplatz	3428 02
Plantafel Start	06.07.00 00:00
Ist Start	05.07.00 13:23
Sollstueckzahl	2000
Plan. RZ	0:45:00
Rüstzeit	0:40:00
Ist-Stückzahl	2011
Plan LZ	3:00:00
Laufzeit	4:01:00
Ausschuss gel.	0
Transportzeit	0:00:00
Stoerzeit	0:00:00
Losgrosse	0
Transportmittel	
Stoergrund	

At the bottom of the window, it shows 'Datensatz: 1 von 4 (Sel: 0)' and 'F1. Hilfe'.

Order Data Interface

The FIT Order Data Interface makes it possible to adopt order data from and transfer them back to overlapping systems.

The order data interface for the PPS/ERP systems from SAP, Baan, Brain and Ifax is available optionally.

The following functions of the FIT Data Management module can be activated from overlapping systems (PPS/control centre):

- ◆ Inputting of new order data
- ◆ Addition of new order data
- ◆ Modification of entered order data
- ◆ Deletion of order data
- ◆ Swap-out of order data.

FIT offers the following functions for comparing new order data with the existing local order data:

- ◆ Adoption of the new order data
- ◆ Maintenance of existing order data (e.g. in the case of orders in progress)
- ◆ Adoption of new order data while maintaining the local order status and actual order data
- ◆ Updating of the new order data.
- ◆

Order Data Management

Before the orders can be processed, the FIT Order Administration tool distributes the order data according to the instructions provided by the superior control system.

- ◆ Assignment of the order instructions to the workstations stipulated by the control system. Unlike the case with a factory control system, no rescheduling, splitting or blocking of the order data takes place.
- ◆ Stipulation of the sequence of orders for the respective workstations in light of the rules transmitted by the control system (start date, priority,...) and of the local order information (e.g. already in process). Unlike the case with a factory control system, there is no local scheduling or sequence optimisation.

Resource Check

Checks the availability and completeness of the production resources needed for the start of production.

The following resources can be checked locally:

- ◆ Availability of required part information (e.g., NC data, production documents, drawings ...)
- ◆ Valid part and job states (e.g., released for production)
- ◆ Available tool settings (if required)
- ◆ User-defined resource data.

If production resources are not available, this status can be determined and saved in the job record.

The locally available job information is continued within FIT (e.g., number of units produced, tooling time, running time ...) and made available to the overlapping system in parallel.

Configuration of the Order Data Administration

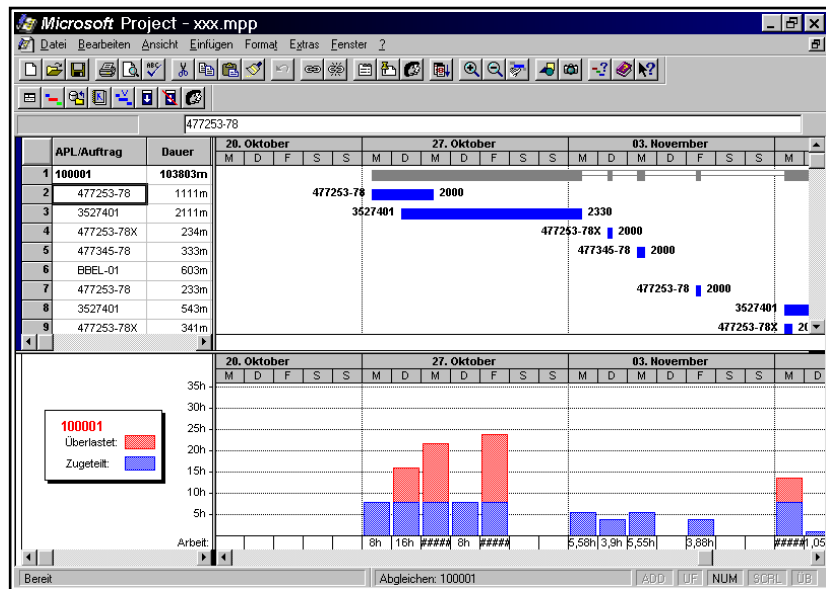
The following facts can be localised or configured in order data administration:

- ◆ Adapting the names to business usage (e.g., job number □ transaction)
- ◆ Configuring the managed job files (e.g., tool settings, NC programmes, drawings...)
- ◆ Saving job states with a plaintext message
- ◆ Defining the resources to be managed per job (e.g., managing the actual tool data, assembly list etc.)
- ◆ Defining the production resources required for processing a job (e.g., NC data and tool settings must be available)
- ◆ Configuring and defining the order data interface to overlapping systems (e.g., active, passive, data formats)
- ◆ Defining the resources to be managed per job (e.g., managing the actual tool data, assembly list etc.)

Project



The Project Product is used to map job specifications in the form of a planning board, a job sequence and capacity utilisation. The module project is based on the Microsoft product "MS Project", on FIT planning macros and on the FIT communication interface "Db-Gate".



Job Sequence Functionality

The use of the planning board module, in conjunction with the FIT Time Data Administration core module, makes it possible to display any overage or shortage for different shift models and the planned dates (capacity analysis).

Displaying and editing

- ◆ Displaying and modifying the sequence of individual work steps
- ◆ Scheduled and earliest start and finish date
- ◆ Status of the individual work steps (in progress, finished ...)
- ◆ Capacity shortage or overage
- ◆ Processing time for shift models
- ◆ Workstation capacity
- ◆ Processing times of the workstation according to shift model
- ◆ Current workstation status
- ◆ Simulated changes in capacity and shift model
- ◆ Saving the modified sequence and planning parameters
- ◆ Changing the display period
- ◆ Moving the display period
- ◆ Displaying the job number or part number on the base
- ◆ Displaying all job-relevant information
- ◆ Printing all information
- ◆ Displaying the handling of a given job via different workstations (job sequence)

Time Data Administration

In FIT software, time data administration is an integration module that connects staff with workplaces, activities and jobs. The flexibility of the module supports possible applications from access control to Personnelough to the supply of payroll systems (e.g., to PAISY or SAP-PERSONNEL). In conjunction with the FIT Report Generator add-on module, the ability to collect detailed data also supports flexible work schedules (bonuses, group compensation, multiple-machine work).

The combination of staff, workplace and job data provides data that can go directly to costing/final costing.

The attributes of the data, their management and access privileges can be aligned with the respective data protection laws (user administration).

Time Data Administration Structure

Shift model

Shift model

Shift models are a component of the Time Data Administration module and can be used to map the following time models:

- ◆ Rolling, daily, weekly and monthly shift models (maximum number 9999)
- ◆ Automatic calculation of recurrent exception days (Easter, Personnelist ...)

The workstations and persons managed in the FIT system are assigned the defined shift models.

Activities

To ensure that activities related to workstations, cost centres and persons can be reported to overlapping systems (e.g., PAS), the different activity variants are first defined in the FIT system (e.g., present, process, set up, special credit ...).

An activity is uniquely defined by:

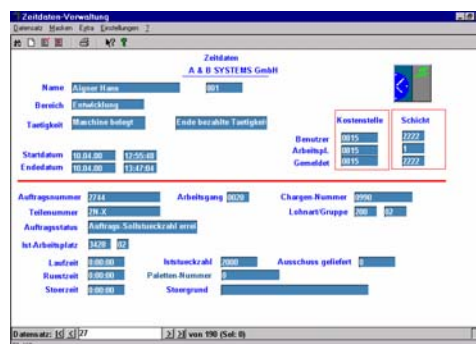
- ◆ a unique label,
- ◆ a name and
- ◆ various transaction specifications (e.g., suspends all other open activities of a person...).

Time Data Administration Functionality

The collected time data can be displayed on the monitor, edited and maintained.

Displaying and editing

- ◆ Displaying all data of a certain time data record (justified text)
- ◆ Displaying time data in the form of configurable tables (e.g., open activities of a workstation)
- ◆ Processing all or certain time data records with the help of the Report Generator. The display form can be configured – calculations across individual data records are possible.
- ◆ Changing the time data records (confirmation)
- ◆ Locking and releasing time data
- ◆ Creating new time data records (holiday/sick)
- ◆ Deleting time data records (false reports)



Time data record sample

Time Data Interface

The time data interface offers the following options:

- ◆ Importing and exporting of time data from/to external systems
- ◆ Automatic initiation of transactions at definable times (e.g., lunch break, shift end ...) for posted time data records (e.g., all of a user's open activities are temporarily completed and re-created as open after the end of the break). Automatically generated data records can be distinguished from manually created data records.

In connection with the FIT Report Generator module (option 4100), reports can be generated interactively or automatically and forwarded to external systems. This function also enables the compression of data (e.g., all of a user's processing data records can be summarised by the day).

Configuration

The following facts can be localised or configured in time data administration:

- ◆ Adapting the names to business usage
- ◆ Defining the states of time data records and assigning a plaintext message (e.g., open, completed, suspended, to confirm ...)
- ◆ Defining periods for creating shift models
- ◆ Creating shift models using the defined periods
- ◆ Assigning shift models to workstations and persons
- ◆ Defining activities that can call and report different processing modules
- ◆ Linking individual transactions with activities and posting time data according to the configured activities
- ◆ Configuring the time data interface to overlapping systems (e.g., active, passive, data formats)

Personnel Data Administration



An extract from the central personnel master data can be saved in FIT personnel data administration. If time data recording covers personal data, there must be an personnel record in the FIT system for that person. In the FIT system, an personnel data record can be assigned an ID card number, a shift model, a cost centre (department) and various other organisational information and attributes.

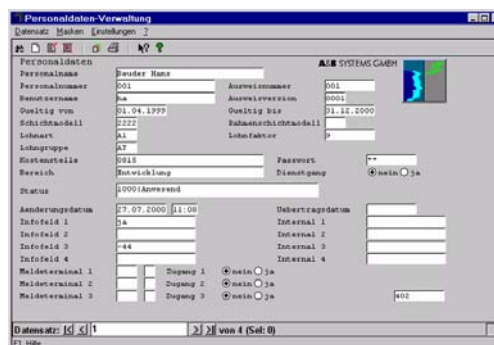
The personnel data interface makes it possible to exchange personnel master data from overlapping systems.

Personnel Data Administration Functionality

The Personnel Data Administration module can be used to display and edit personnel data on the monitor.

Displaying and editing

- ◆ Displaying all data of a certain personnel data record
- ◆ Displaying selected personnel data in the form of freely configurable tables (e.g., all persons present)
- ◆ Displaying personal qualification attributes
- ◆ Modifying, deleting and re-creating personnel data
- ◆ Printing personnel data
- ◆ External mailing or copying of selected personnel data



The screenshot shows a window titled 'Personnel Data Administration' with a menu bar (Datei, Maßen, Erweiterungen) and a toolbar. The main area is divided into several sections for data entry and display:

- Personaldaten:** Includes fields for Name (Bender Hans), Personalnummer (001), Anwesenheitsnummer (001), Anwesenheitsversion (0001), and various dates like 'Gültig von' (01.04.1999) and 'Gültig bis' (31.12.2000).
- Personalnummer:** Fields for 'Anwesenheitsnummer' and 'Anwesenheitsversion'.
- Personalqualifikation:** Fields for 'Schichtmodell' (FIT), 'Lohnart' (A1), 'Lohnfaktor', 'Lohngruppe' (A1), 'Kostenstelle' (015), 'Bereich' (Rohrleitung), 'Passwort', 'Einstieg' (radio buttons for 'nein' and 'ja'), and 'Status' (1000/Anwesen).
- Änderungsdaten:** 'Änderungsdatum' (27.07.2000 11:00) and 'Übertragsdatum'.
- Infofelder:** Four internal fields (Infofeld 1-4) with values like '5A', '44', and '402'.
- Meldeterminale:** Three fields for 'Meldeterminal 1-3' with radio buttons for 'Dagung 1-3' and 'nein/ja'.

At the bottom, there is a status bar showing 'Datei: ID <1' and '1 von 4 (Seite 0)'.

Personnel data record sample

Personnel Data Interface

The FIT personnel data interface allows you to transfer personnel data from and to overlapping systems.

The personnel data interface for SAP-personnel is optionally available.

From the overlapping payroll system (PAS), the following FIT data administration functions can be activated:

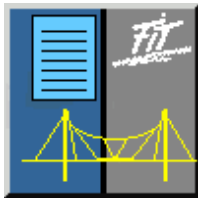
- ◆ Creating new personnel data
- ◆ Adding new personnel data
- ◆ Modifying posted personnel data
- ◆ Listing personnel data
- ◆ Deleting personnel data

Personnel Data Administration Configuration

The following facts can be localised or configured in personnel data administration:

- ◆ Adapting the names in use to business usage (e.g., cost centre □ department)
- ◆ Saving the personnel states with a plaintext message (present, holiday, sick)
- ◆ Defining qualification attributes (e.g., forklift operator, machine operator ...)
- ◆ Configuring files to be managed in connection with the personnel data record (e.g., passport photo, balance list ...)
- ◆ Configuring and defining the personnel data interface to overlapping systems (e.g., active, passive, data formats)

DbGate



DbGate can be used as an interface between FIT database classes and OLE-capable applications. Programmes like Microsoft Excel and Microsoft Project can use DbGate to directly select and process data from the FIT database. With DbGate, modified data can be written back to the production database (e.g., new project planning data). All database access is logged in the FIT logbook, allowing you to track the data exchange.

The DbGate and FIT-Remserver (part of the basic software) programmes provide data access to the FIT database independent of the operating system of the FIT database server.

The DbGate programme opens up a broad range of standard software to the user.

Report Generator



The Report Generator can be used to select, offset, format and output time data records managed in FIT. Various programme modules are available, which are connected consecutively, i.e., the output of one programme module is processed by the following programme module as input.

A selection programme triggers a process chain, which extracts the data from the database and, in the simplest case, passes the data directly to an evaluation programme for the creation of the desired report. The evaluation programme edits and formats the desired data based on configuration information. Various filtering programmes can be interconnected to compress, split and condense the data. The individual reports can be accessed with various configuration files.

Program for the Report Generator

Selection programs

Selection programmes are designed to extract the desired time data records from the database and provide them as defined output formats. FIT provides various selection programmes for implementing different operational sequences.

Filtering programs

The filtering programmes can be used to filter and post-process time data records.

Evaluation programs

Evaluation programmes are designed to edit time data records based on a configuration file and to display the data in the form of a report on the monitor or write it into a transfer file.

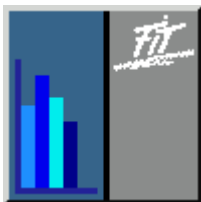
Additional programs

Additional programmes are included to support the user in frequently recurring tasks. For example:

- ◆ datetest checks entries for a valid date
- ◆ date-fmt formats date information in calendar weeks.

Other additional programmes are available.

Statistics Module



The FIT Statistics module can be used to create any statistical evaluations/presentations of the connected workplaces. For example, machine utilisation, malfunction analyses, shift comparison ...

The statistical evaluations are created with Microsoft Excel[®] and special FIT statistics macros. The FIT Statistics module requires the following products:

Microsoft Excel[®], FIT Db-Gate and FIT Time Data Administration.

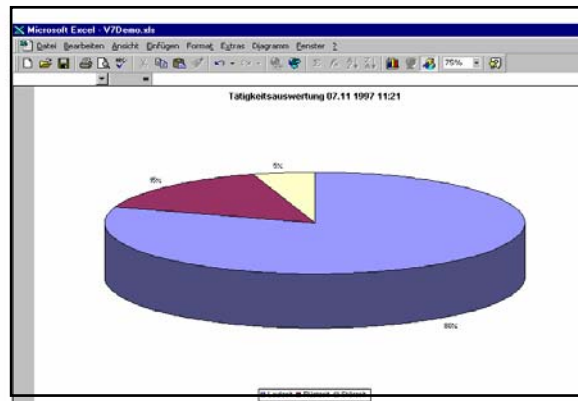
- ◆ Counting results
- ◆ Summing up parameters
- ◆ Correlating results
- ◆ Evaluations by percent

The following evaluations are available:

- ◆ Usage and malfunction behaviour of individual workplaces
- ◆ Customer-specific statistical evaluations, provided the statistical attributes are reported to time data administration as an activity.

The configuration of the individual statistical evaluations is saved as a Visual Basic macro.

The statistical evaluation is only possible in connection with the Time Data Administration module.



FIT-Editor

The FIT editor is a program that enables the user to create and edit ASCII text files with simple operations. The FIT editor is used to edit FIT configuration, part and order files.

The FIT editor can be invoked from the interactive FIT user interface. Any size of file may be edited. Existing NC programs can easily be modified using special editing operations (e.g. exchange of coordinates, offset addition, rate of feed etc).

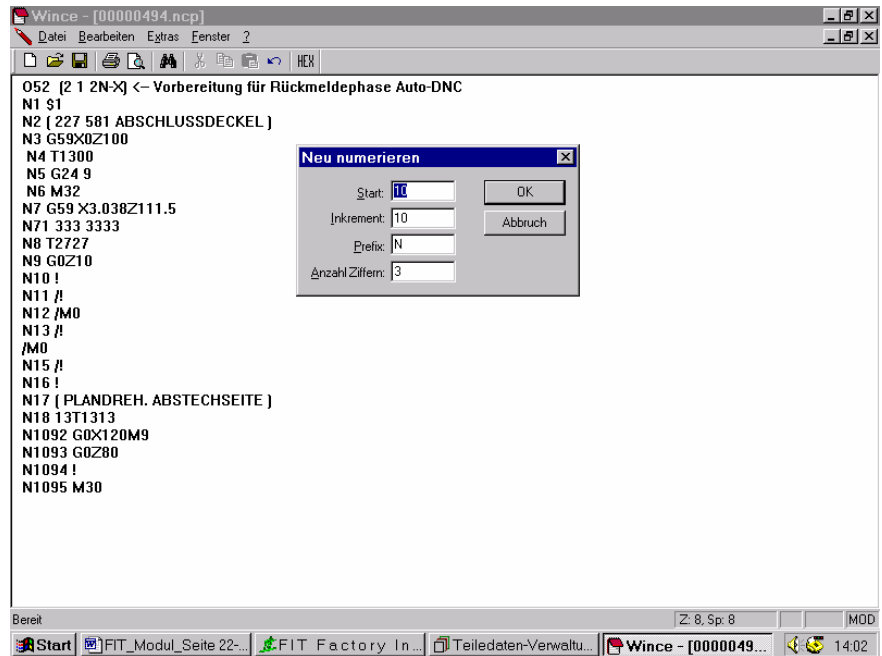
Menu Items

- | | |
|---------------|--|
| File | <ul style="list-style-type: none">◆ Open◆ Save◆ Save As◆ Insert |
| Search | <ul style="list-style-type: none">◆ Search◆ Replace◆ Repeat |

- Block**
- ◆ Select
 - ◆ Copy
 - ◆ Move
 - ◆ Delete
 - ◆ Write.

- NC functions**
- ◆ Re-number
 - ◆ Compare
 - ◆ Mathematical calculations

FITNC-Editor



Mirror license



The mirror license option allows a second computer to be used as a fully functional standby system. It contains all of the options installed on the master system. The mirror system is continuously updated with the user data of the master system, i.e. the available data stored on both FIT systems is identical. If the master computer fails, the standby computer automatically takes over.

When the master computer comes back on-line, the data files of the master computer are synchronised with those of the standby computer, and the master computer takes over as the active system. Other system components such as PDA terminals are not affected when the master computer fails.

The mirrored system results in minimum downtime and ensures a self-sufficient operational capability of the FIT system. As a result, there is less reliance on qualified maintenance personnel being available all the time (round the clock in some cases).

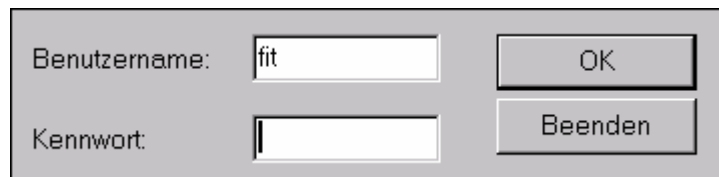
FIT-Client

The FIT Client provides the user with a central location for accessing all applications and data that he may require for his work with the FIT application.

The FIT client program, running on computers that are recognised by the network, can connect to the FIT base program and communicate with the database.

Data is exchanged with the server via a TCP/IP socket connection.

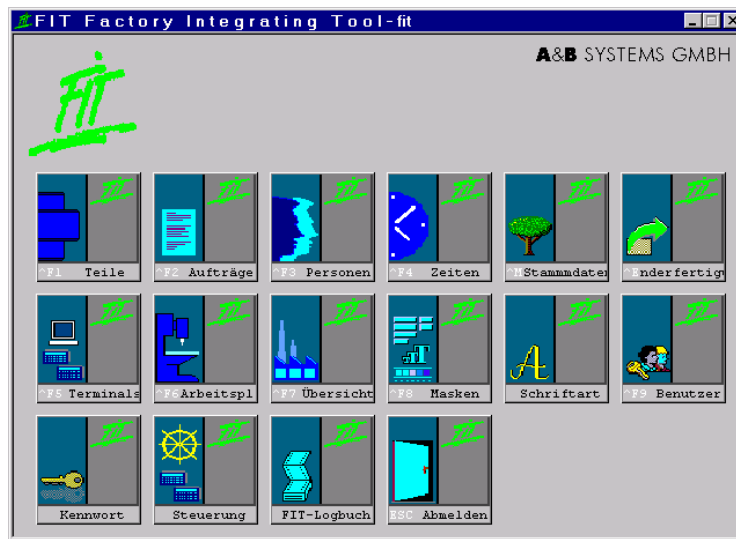
When the FIT client is started, the user must login with his username and password.

A screenshot of a login dialog box. It has a light gray background and a thin border. On the left, there are two labels: 'Benutzername:' and 'Kennwort:'. To the right of 'Benutzername:' is a text input field containing the text 'fit'. To the right of 'Kennwort:' is an empty text input field. On the far right, there are two buttons: 'OK' (top) and 'Beenden' (bottom).

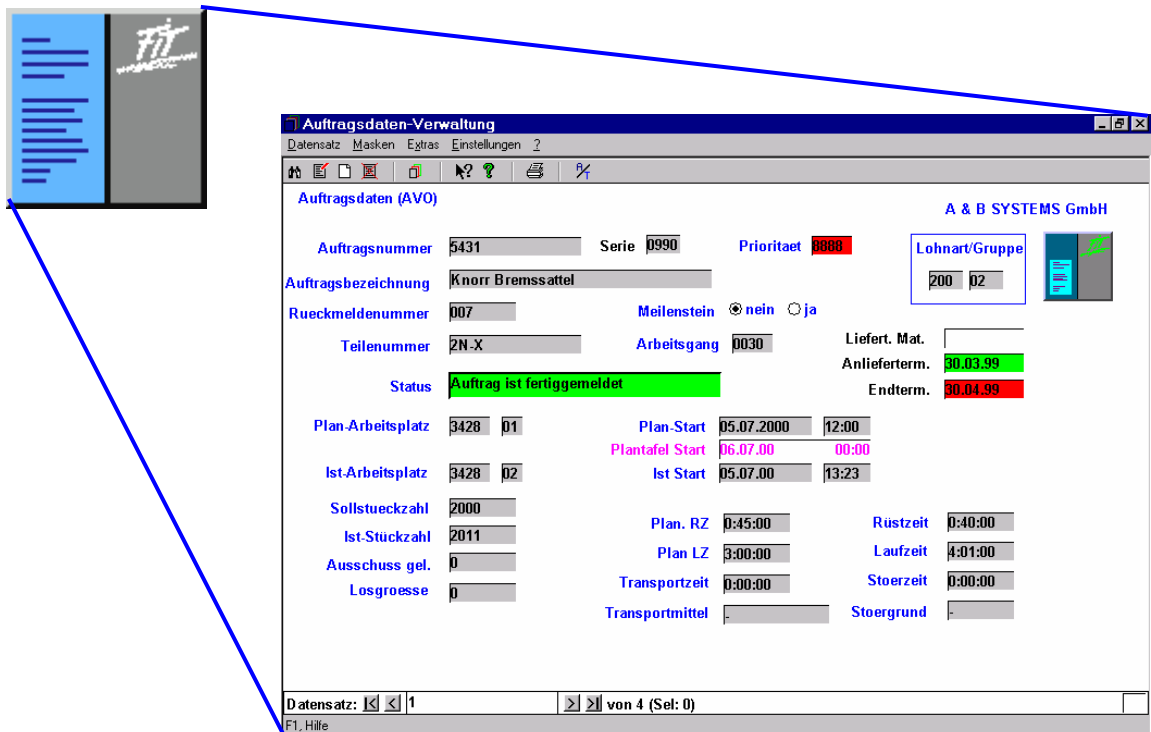
The local software version is then compared with the latest version of the client software on the server, and if there is a more recent active version on the server, this is used to replace the old version. This facility allows the centralised administration of distributed programs.

At login time, the server software checks the number of users logged on. If the number of concurrent users has been exceeded, the login is rejected.

After a successful login, the START-UP menu for this user is loaded in the computer.



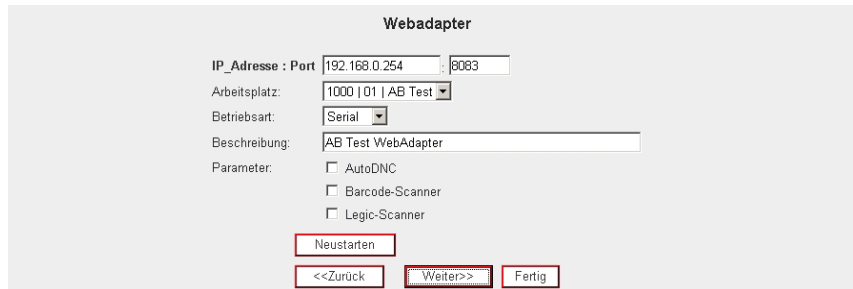
The START-UP menu can be used to establish connections to individual database tables and programs, and to execute actions. Data is displayed via user-customised screen forms. The screen forms are created with the FIT screen form editor (part of the basic software).



Example of a user-customised editing screen form

FIT MI

Machine Interface – browser-based user interface for configuration and connection of production workplaces via serial or LAN interface.



Webadapter

IP_Adresse : Port 192.168.0.254 8083

Arbeitsplatz: 1000 | 01 | AB Test

Betriebsart: Serial

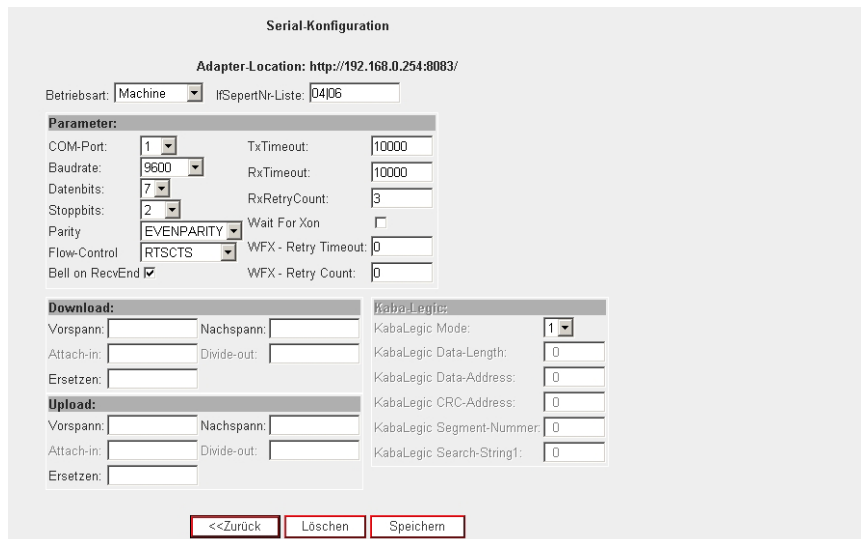
Beschreibung: AB Test WebAdapter

Parameter: AutoDNC
 Barcode-Scanner
 Legic-Scanner

Neustarten

<<Zurück Weiter>> Fertig

Configuration interface for LAN connect



Serial-Konfiguration

Adapter-Location: http://192.168.0.254:8083/

Betriebsart: Machine IfSepertNr-Liste: 04D6

Parameter:

COM-Port: 1 TxTimeout: 10000

Baudrate: 9600 RxTimeout: 10000

Datenbits: 7 RxRetryCount: 3

Stoppbits: 2

Parity: EVENPARITY Wait For Xon:

Flow-Control: RTSCTS WFX - Retry Timeout: 0

Bell on RecvEnd: WFX - Retry Count: 0

Download:

Vorspann: Nachspann:

Attach-in: Divide-out:

Ersetzen:

Upload:

Vorspann: Nachspann:

Attach-in: Divide-out:

Ersetzen:

KabaLegic:

KabaLegic Mode: 1

KabaLegic Data-Length: 0

KabaLegic Data-Address: 0

KabaLegic CRC-Address: 0

KabaLegic Segment-Nummer: 0

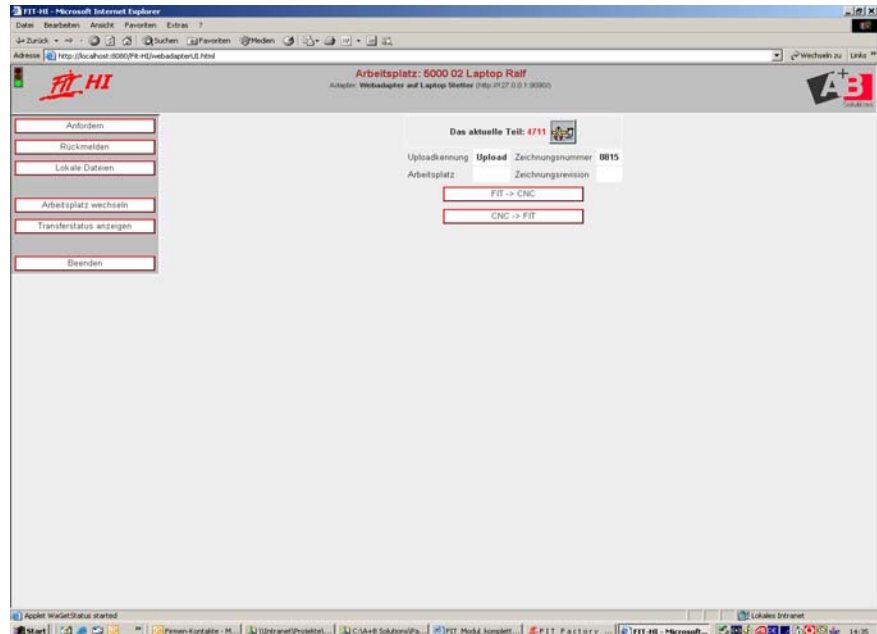
KabaLegic Search-String1: 0

<<Zurück Löschen Speichern

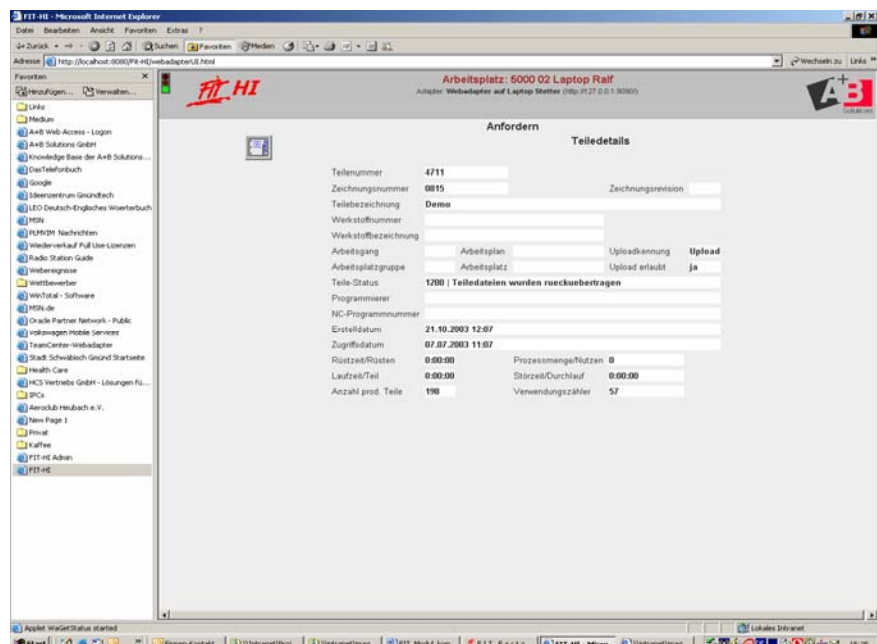
Configuration interface for serial connect

FIT HI

Human Interface – simple browser-based user interface used by machine operators for NC program queries and acknowledgements, querying parts information, displaying attached files such as drawings, tooling sheets, 3D models, tool data, photos and much more. NC programs can be compared or edited via the user interface.



FIT HI start interface



FIT HI part informations

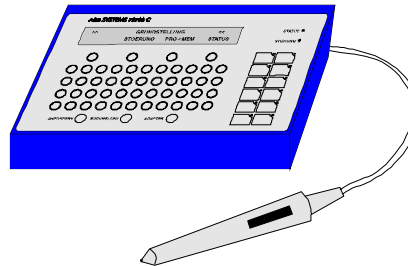
Terminals / Data Terminals



The 79700 terminal family/software, was developed in close cooperation with FIT, to connect the production workplaces. The concept of general purpose PDA terminals/software parameterised according to the application was adhered to from the outset and implemented throughout the system architecture.

The following system requirements were developed:

- NC data transmission (DNC operation)
- Machine data capture with pre-processing (MDE operation)
- Interactive production data capture (PDA)



- Time and personnel data capture (PZE)
- Parameterisation in plain text

Depending on the environment and nature of the workplace, a standard type 79700 PDA terminal or a PC (industrial or office) with 79700S terminal software or FIT MI may be chosen.

Both types of device are connected to the FIT computer via a standard network (copper cable, fibre optic cable or wireless).

79700-Terminal

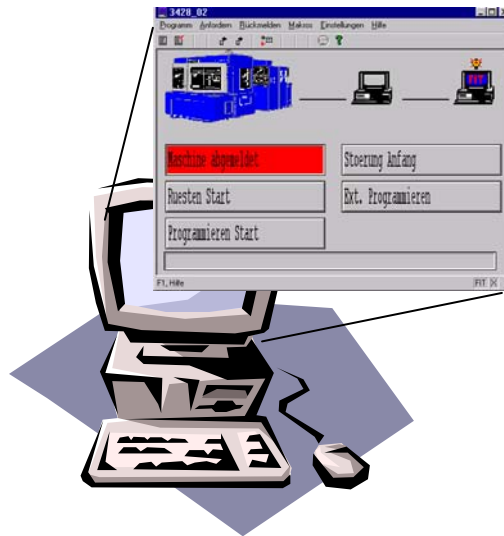
The 79700 terminal is an easy-to-use and reliable data terminal, designed for heavy industrial use.

The terminal has two serial interfaces for connecting NC controllers (DNC), digital inputs/outputs for direct connection of machine data, alphanumeric keyboard with function keys or barcode reader for order acknowledgements and fault logging (PDA functions).

The terminal configuration is managed by centralised terminal/workplace administration.

79700S Terminal Software

Workplaces that already have a PC, or that require a graphical user interface (to display drawings, photos etc), are connected using the 79700S software to the FIT server.



With this software, the same operations as previously described for the terminal (DNC, MDE, PDA and PZE capture) can be performed. The application can also be linked to other programs, e.g. Excel, Word, Paint or appropriate editors. The use of a PC as a data terminal opens up many application areas.

Contact:

A+B Solutions GmbH

Sebaldstraße 23

73525 Schwaebisch Gmuend

Germany

Phone: +49 / (0) 7171/92740-0

Fax: +49 / (0) 7171/92740-44

www.AplusB-Solutions.com

E-mail: info@AplusB-Solutions.com