G+D
Currency Technology

CTCS

CURRENCY MANAGEMENT SOLUTIONS

Training Program

Status March 2019

Table of Contents

Training BPS X9

Training BPS X9

User Training

Operator Training

1 week

Customer Specific Training

Customer Specified	duration customer dependent

Technical Training

Basic Technical Training

4 weeks

Basic Technical Compact Training

3 weeks

Update Training for BPS 2000 Specialists

2 weeks

Advanced / Customer Specific Training

duration depends on selected module(s)

Available Modules

Machine Service	tbd
Sensor System Analysis and Troubleshooting	tbd
Adaptation Support Tools	tbd
Software Installation and Backup	tbd
Database	tbd
On Site Inspection and Maintenance	tbd
Customer Specified	duration customer dependent
Interfacing to CutLink X	tbd
Interfacing to NotaPack	tbd
PE check	tbd
Remote Access	tbd

BPS X9 – Operator Training

Pre-requisites:	Basic technical knowledge
Duration:	1 week / 5 training days
Participant's max.:	6
Training goals:	After completion of this training the participant will be self sufficient in the operation and banknote processing of the BPS X9
Notes:	Due to the site dependent process particularities, this training is to be held on-site. For sites unknown to the trainer, a site inspection is required to analyse customer specific requirements and processes (on-site; duration: one day). This training can be held according to customer's rotating shift schedule.

Curriculum:

Week 1: System Operation

Welcome and organisational information about training

Training overview

BPS System tasks: Counting, sorting, authenticity testing

Structure of the system: Counting Machine (CM), Quality Inspection Control Center (QICC), peripheral components

Explanation of concepts

QICC Control Center (CC)

Operation manuals

Starting up the Counting Machine (CM) and processing banknotes

Singler stop, emergency stops

Error handling

Jam recovery

Power failure

Consumables replacement

BPS X9 – Basic Technical Training

Pre-requisites:	Refer to the “Skills Assessment BPS X9 Maintenance” document
Duration:	4 weeks / 20 training days
Participant’s max.:	6
Training goals:	After completion of this training the participant will be self sufficient in the repair and maintenance of the BPS X9 in the areas mechanics, electrics, electronics, and pneumatics

Curriculum:

Week 1: Operating the system

Welcome and organizational information about training

Training overview

Safety Instructions

BPS system tasks: counting, sorting, authenticity testing

Structure of the system: Counting Machine (CM), Quality Inspection Control Center (QICC), peripheral components

Explanation of concepts, Production Order

QICC, Control Center (CC) / CC Plug-Ins

Starting up the CM and processing banknotes

Operating Controls

Cleaning, Replacing Consumables

Singler stop, emergency stops

Reports and logs, printouts

Jam Recovery

Power failure (Component Failure Recovery)

Weeks 2 and 3: Theoretical fundamentals

Functionality of the Loading module, carrier transfer

Functionality of the Input module, Feeding Assembly, Singler, Transport Section, Sensor Section

Functionality of the Base Module, Sensor Section

Functionality of the Reject Module, Reject Handling

Functionality of the Delivery Module, Stackers, Banders, Bundlers

Functionality of the Shredder Module, Special Stacker, Audit Stacker

Automatic flap doors

Pneumatics (air distribution system)

Electrical overview, Power Supply, UPS

Control and synchronization signals (Machine Clock, Singler Zero)

Main Controllers (SCS, MPC)

Module Controllers (LMC, IMC, BMC, STC, GPC, BPC, SRC),

Controller communication, data buses

Connecting to a network

Software recovery

Control Center (CC)

Banknote Analyzer

Weeks 3 and 4: Maintenance and adjustment works

Maintenance manual

CC Adjustment Plug-In

Service Report

Removal and replacement of assemblies

Disassembly, assembly and adjustment of the singler

Adjustment of banders and bundlers

Gate replacement

Stacker synchronization and adjustment

Adjustment of actuators

Signal tracking

I/O ports, detector and actuator control

Analyzing sensor failures

Fault tracing and trouble shooting

Preventive and scheduled maintenance

BPS X9 – Basic Technical Compact Training

Pre-requisites:	Refer to the “Skills Assessment BPS X9 Maintenance” document
Duration:	3 weeks / 15 training days
Participant’s max.:	4
Training goals:	The participant will receive knowledge of the technical system BPSX9 and the interaction of the components. He will be self-sufficient in troubleshoot and maintain the BPS X9.
Difference to Basic Technical Training:	Fewer participants, less basics, focus on understanding the whole system, tools for troubleshooting and less disassembling parts.

Curriculum:

Week 1: Operating the system

Welcome and organizational information about training

Training overview

Safety Instructions

BPS system tasks: counting, sorting, authenticity testing

Structure of the system: Counting Machine (CM), Quality Inspection Control Center (QICC), peripheral components

Explanation of concepts, Production Order

QICC, Control Center (CC) / CC Plug-Ins

Starting up the CM and processing banknotes

Operating Controls

Cleaning, Replacing Consumables

Singler stop, emergency stops

Reports and logs, printouts

Jam Recovery

Power failure (Component Failure Recovery)

Weeks 2: Functionality of Modules, Control Center, Service Tools

Functionality of the Loading module, carrier transfer

Functionality of the Input module, Feeding Assembly, Singler, Transport Section, Sensor Section

Functionality of the Base Module, Sensor Section

Functionality of the Reject Module, Reject Handling

Functionality of the Delivery Module, Stackers, Banders, Bundlers

Functionality of the Shredder Module, Special Stacker, Audit Stacker

Software architecture

Software Tools

Software installation

Recovery

Service Tools in SW
Service Tools in HW
Log files, Reports, Analyses
Typical error scenarios

Control Center (CC)

Weeks 3: Adjustments and troubleshooting, Service Tools

CC Adjustment Plug-In

Service Report

Removal and replacement of assemblies

Disassembly, assembly and adjustment of the singler

Adjustment of banders and bundlers

Gate replacement

Stacker synchronization and adjustment

Fault tracing and trouble shooting

Typical error scenarios

BPS X9 – Update Training for BPS2000 specialists

Pre-requisites:	The technical training is intended for BPS2000 specialists.
Duration:	2 weeks / 10 training days
Participant's max.:	6
Training goals:	The participant will receive knowledge about the differences between the BPS2000 system and the BPSX9 in the areas of operation, hardware and software. After the training, he will be self-sufficient in operate, repair and troubleshoot the BPS X9.

Curriculum:

Week 1: Operation and software

Operation
- **Banknote Processing**
- **Production Order**
- **System Error**

Control Center
- **Plug Ins**
- **Customer Tools**
- **Service Tools**

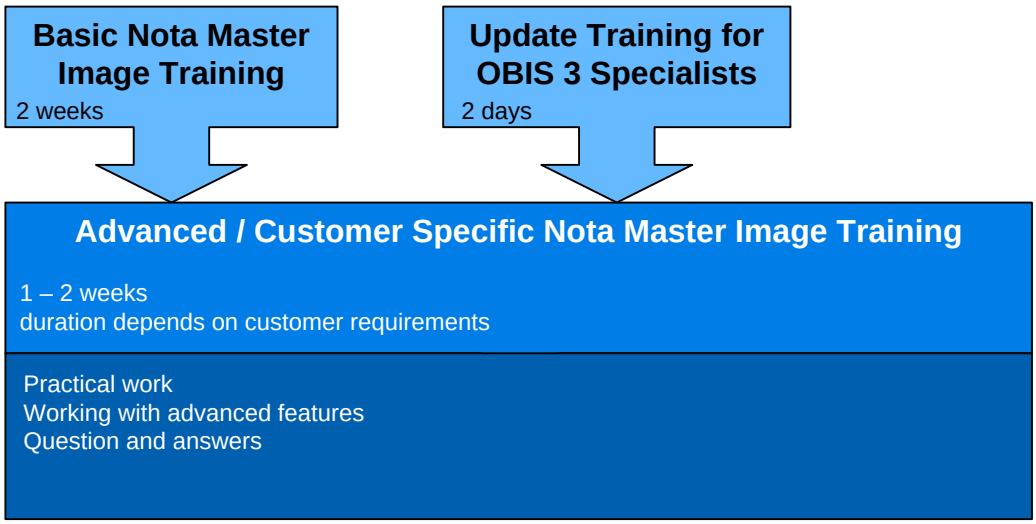
Software
- **Overview System Software**
- **Software Tools**
- **Installation**
- **Recovery**

Week 2: Hardware

- **Theory**
- **Design Features**
- **System Architecture**
- **General Improvements**

Modules
Sensor Basics
Controllers and Interfaces
Subsystem QICC2-PC
Subsystem MPC
Sensor Subsystem
Subsystem Real Time Control
Hardware
Software
Sections
Service Schema / Service Key
Practice:
Identify the differences to BPS2000
Reports and Logs
CC Plugins
Main topics from manual Adjustment procedures
Main topics from Repair manual
Installation and removal of the shredder with test

Nota Master Image Training



BPS X9 – Nota Master Image Basic Training

	Pre-requisites:	Refer to the “Skills Assessment BPS X9 document
	Duration:	2 weeks / 10 training days/ 60 hours
Participants’ max.:	4	
Training goals:	The emphasis placed in the training measures depends on the previous knowledge and skills of the participants, so that durations given here for the individual training modules must be regarded as approximate only.	

A detailed breakdown can be provided with knowledge of participants' previous qualifications as appropriate to their future roles. Course targets, content and duration are adapted accordingly. This means that concrete offers are drawn up and submitted by the responsible training personnel in accordance with the respective customer's requirements.

Curriculum:

Hardware and Software

System Overview

Hardware components

Electrical connections

Link to the BPS X9

Introduction to the Optical Inspection System User Interface (OISUI)

Main Menu

Online and offline operation

Adjustment mode, calibration mode and production mode

Adjustment Works

Alignment of camera optics and adjustment of focus

Acquisition parameters

Brightness adjustment, camera gains

Flat field correction (FFC)

Correction of lens distortion (CLD)

Upload of the calculated parameters, extra gain

Recording and storage of banknotes

- **Banknote storage**
- **Memory buffers: continues, marked from machine and marked from NMI**

Basics of banknote inspection

- **Basic inspection sequence**
- **Master banknote and training set, selective training set**
- **Inspect tree: structure, inspection sequence and hierarchy**
- **Inheritance of inspection items**

Working with the OISUI Software

- **Inspection of banknotes**
- **Inspect tree, edit window, result list and analysis window**

Creating an adaptation

- **Determination of the training set**
- **Training set administration**
- **Brightness normalisation**
- **Size / Alignment**
- **Cut inspection**
- **Layer principle**
- **Denomination layer**
- **Geometrical normalisation of prints by using tie points**
- **Working with projection regions**
- **Inspection regions and editing of inspect region parameter sets**
- **Masking of optical instable areas (e.g. reflecting foils)**
- **Serial number inspection**
- **Scaling parameters and measurements**
- **Use of transfer points**
- **Use of auxiliary points**
- **Denomination layer**
- **Use of variable print characteristics (VPC)**
- **Statistic regions**

Online operation

- **Verification of the adaptation**
- **Training regions**
- **Error zones and production statistics**
- **Blob analysis and error weighting**
- **Result history and history setup**
- **Upload of parameter set**

Practical works

- **Opportunity to create own adaptation**

BPS X9 – Nota Master Image Update Training for OBIS 3 specialists

Pre-requisites: Very good knowledge of building OBIS 3 adaptations including fine-tuning, field experiences and production ramp-up. Skilled application of all available inspects items and clear know-how about adaptation structure and philosophy.

Duration: 2 days

Participants' max.: 4

Training goals: After successful participation of this training the participants will be able to create and maintain NMI-adaptations for any denomination using the advanced NMI features.

The training is intended for OBIS 3 specialists mainly coming from OBIS 3 Vx.20 or lower and who need to apply their expertise to NMI with its advanced features. Since some of these features are also implemented in OBIS 3 Vx.22 the training covers partly the upgrade to the OBIS 3 version.

Equipment: Every participant should have his/her PC/Notebook available, either their own ones (WIN7 /administrator rights required) or provided by G&D. Software and dongle provided by G&D.

Curriculum:

Hardware and Software

System Overview

Hardware components and installation

Software components

Handling

New connection of OBIS to machine

Camera calibration and adjustment

Adaptation tool (OISUI)

Offline

Wizard to initiate adaptation

Automatic creation of reference brightness region

Import of measurements into adaptation tool

Only one definition of adaptation orientation

Only one scaling of master banknote

Synchronization of edit window and inspect tree

- **Automatic creation of parameter sets for inspect regions**
- **Detailed definition of quality check in serial number inspection**
- **More robust search for VPCs and tie points**
- **Assisted mode for fine-tuning through minimization of tuning elements and automatic interaction with error function parameters**
- **Projection regions, statistic regions and brightness regions show expected results already for master banknote**
- **Quick navigation to detected errors**
- **Check for adaptation errors in inspect regions**
- **Multiple selections in result list**
- **Assessment and classification for cutting errors**
- **Change of singling orientation when replacing (and resizing) master banknote**
- **Saving and inserting features**
- **New outline search**
- **Conversion OBIS 3 adaptation to NMI**

Online

- **New index administration for denominations (HEX ID)**
- **New dialogue for saving raw data**
- **New management for unfit banknotes (OBIS and machine)**
- **Management of dynamic properties and their publication**

Features to be activated by SW-key or dongle

- **DifferenceOfMeasures_Obis4**
- **ExtendendedErrorZoneResults_Obis4**
- **ProductionStatistics_Obis4**
- **SavingOfAnalysisImages_Obis4**
- **SavingOfFeatures_Obis4**
- **SerialNumberSorting_Obis4**
- **SpecialVerticalScratchFeature_Obis4**
- **TrainingRegions_Obis4**

OBIS PC

- **Windows 7**

Questions / Clarification

BPS X9 – Advanced Training OBIS 3/ Nota Master Image

Pre-requisites: Good knowledge of building OBIS 3 / NMI rough adaptations and skilled application of all available inspect items.

Duration: 5 - 10 days according to customization

Participants' max.: 4

Training goals: After successful participation of this training the participants will be able to prepare an OBIS/NMI adaptation for production. This includes advanced fine-tuning for false unfit rate reduction and supervision while production ramp-up.

The training is intended for OBIS 3 / NMI specialists who attended the respective basic training and who are able to carry out rough adaptations. The objective of this training is to prepare the participants for collecting dedicated field experiences including fine-tuning and production ramp-up, i.e. targeted reduction of false unfit rates and creation of appropriate production environment. The training can be tailored according to customers' needs and requirements.

Equipment: The training is preferably held at customer's premise since production environment is needed for realistic knowledge transfer regarding the afore-mentioned targets. Classroom with projector.

Curriculum:

Brief Repetition and Answering Questions

Repetition of adaptation rules and inspection elements

Opportunity of clarification of questions and knowledge gaps

Discussion of existing customer adaptation (if necessary)

Practical work with OBIS / NMI at BPS2000 resp. BPS X9 under G&D supervision

Camera adjustment and calibration (focus, angle, position)

ACQ parameters, camera gain, FFC, CLD

Visual evaluation of images

Proper selection of training set banknotes

Raw data recording

Fine-tuning according to customer standard

Developing methodology for reduction of false unfit rate

Ensuring detection of defects according to calibration set or customer QC

Distinction of region parameter modification vs. training set extension

Techniques to identify region parameters for changes and how to modify them

Techniques to identify banknotes to be included to selective training set

Working with Advances Features

- **Difference of measures**
- **Extended error zone results**
- **Production statistics**
- **Saving of analysis images**
- **Saving of features**
- **Serial number sorting**
- **Special vertical scratch filter (if applicable)**
- **Training regions**

BPS X9 – Adaptation Training/ Serial Number Definition

Adaptation Training BPS X9

Adaptation Training

Duration: 1 – 2 weeks

Hardware and Software
Beginning an adaptation from a template
Sensor adaptation
NSCMAG, FLP, M10,SIL, other sensors
GSL Designer
Configurator
Recording raw data
Installation of deployment

Serial Number Definition Adaptation Training

SNDEF

Duration: 2 weeks

Tools and installation
Principles of bankknote numbering
Principle of serial number processing
Partition groups
Examples

BPS X9 Adaptation Training

Prerequisites: Good knowledge of banknote features to be inspected in the framework of banknote printing works machine sorted finishing. The participants should be familiar with the operation of Windows-based PC systems. Basic knowledge of digital image processing is advantageous.

Achievement: After successful participation of this training the participants will be able to create and maintain X9-adaptations (deployment) for any denomination. This includes standard sensor adaptations as well as the configuration of all necessary machine settings.

Duration: The duration of the training depends on the sensor equipment as required by the customer. A training for the complete sensor equipment is scheduled for 2 weeks (10 days). The total time required for the training can be calculated from this schedule. Times indicated in **red** are mandatory; times indicated in **blue** are optional.

Participants: maximum 4

Equipment: Every participant should have his/her PC/Notebook available, either their own ones (WIN7 /administrator rights required) or provided by G&D. Software and dongle provided by G&D.

Hardware and Software — **2 days**

- **System Overview**
- **Hardware components**
- **Software components**
- **Software installation**
- **Handling**
- **Recommended file structure**

Beginning an adaptation from a template

- **Control Center for the configurator**
- **Loading configurator project and prepare template**
- **Control Center for the adaptation tool and the GSL Designer**
- **Adding AlgoDefinitions for adaptation**
- **Rawdata Management**

Sensor adaptation

- **OBIS** — **0.5 days**
- **DIS**
- **SNC**
- **NSCMAGL** — no M10 — **3 days**
  - **NSCMAGLHough**
  - **NSCMAGLPrint**
  - **Clip function for improved serial number evaluation**
  - **Verification of soft magnetic print**
  - **NSCMAGLMultiCode**
  - **Example of a MultiCode thread**

Definition of the thread coding
Diagnosis of evaluation results
Important output properties
Setting length threshold
Further properties to check coded threads for completeness
Checking Consecutive (non-coded) threads for completeness
NSCMAGL_BLDenoIndep

FLP		**1 day**
M10	**no NSCMAG**	**1 day**
SIL		**0.5 days**
Other sensors		
GSL Designer		**0.5 days**

Editing bounds
Editing variables
Setting activators
Setting switches
Setting thresholds

Configurator	**1 day**

Importing sensor adaptation
Sensor settings
Selection of properties to be used in sensor reporting
Property settings
Set stacking modes
Short machine (DM1)
Long machine (DM2DM1)

Recording rawdata		**0.5 days**
Installation of deployment		
Questions / Clarification		**1 day**
	maximum	**10 days**

Serial Number Definition Adaptation Training

Prerequisites: The Serial Number Definition requires a very good knowledge of building algorithms combined with a profound mathematical background. Basic knowledge of C-language is advantageous. Furthermore, the participants should be familiar with the operation of Windows-based PC systems.

Achievement: After successful participation of this training the participants will be able to create and modify serial definition files according to the required numbering scheme. The training conveys furthermore a number of examples taken from real applications which cover most numbering sequences. These examples can then be modified to the actual use case.

Duration: 10 days

Participants: maximum 4

Equipment: Every participant should have his/her PC/Notebook available (WIN7), either their own ones or provided by G&D.

Tools and Installation

- **Notepad++**
- **Dev-Cpp Compiler**
- **Test Tool For Serial Number Definition File**
- **Recommended File Structure**

Principles of Banknote Numbering

- **Basic Parameters**
- **Some Serial Number Structures**
- **Serial Number With Lot Number**
- **Serial Number With IPP Number**
- **Serial Number With Denomination Code And No Position Number**
- **Serial Number Sequence**
- **Sequence Mode**
- **Batch Mode**
- **Batch Mode With Position Numbers**
- **Batch Mode Without Position Numbers**

Principle Of Serial Number Processing

- **Serial Number Processing In The BPS**
- **Organization Of An Adaptation Buffer (SNDEF)**
- **General Denomination Related Description**
- **Partitioning Of the Serial Number**
- **Serial Number Processing Using Variables For Sheet And Position Numbers (e, b**
- **Serial Number Conversion from ASCII to the Binary Format (intern)**

Serial Number Conversion from the Binary Format to ASCII

Serial Number Processing Using the Variable For BNID

Serial Number Conversion from ASCII to the Binary Format (intern)
Serial Number Conversion from The Binary Format To ASCII

Partition Groups

Serial Number Partition Description
Partition Group Part_Lot_Offset (1st SN)
Lookup Table

Several Lookup Tables
Returning The Lookup Table Index
Returning The Lookup Table Value
Searching Lookup Table Value And Returning The Index

Partition Group Part_Intern_ascii
Partition Group Part_ascii_Intern

Examples

Checksum Modulo 9 (Euro Banknotes)
Batch Mode
Using Full Range Of Available Characters In The Serial Number

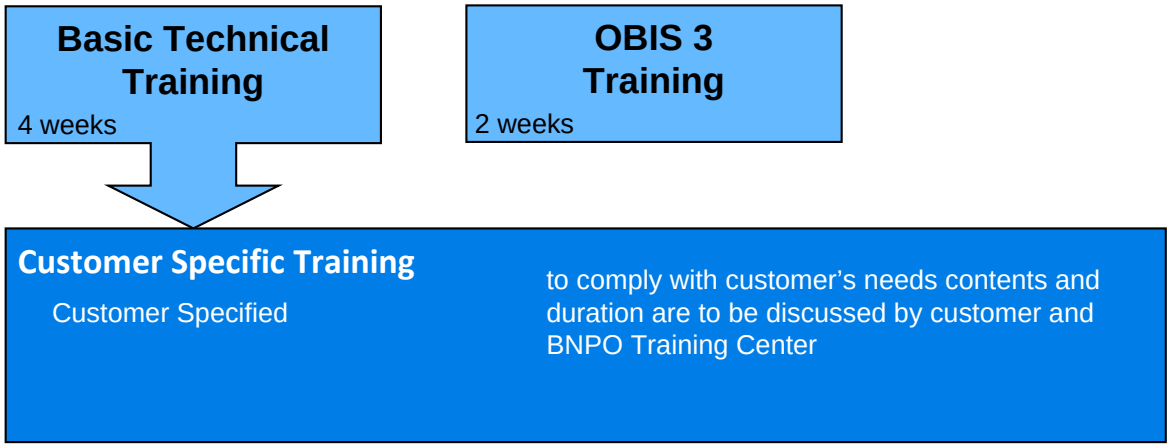
Start Offset At Lot Start
Start Offset Other Than Lot Start
Start Offset At Lot Start With Different Lot Size

Training BPS 2000 QICC / BPS 2000 OBIS / BPS 2000D / BPS 2000B

Training BPS 2000

Operator Training

Technical Training



BPS 2000 – Operator Training

Pre-requisites:	Basic technical knowledge
Duration:	1 week
Participants max.:	6
Training goals:	After completion of this training the participant will be self sufficient in the operation and banknote processing of the BPS 2000
Notes:	Due to the site dependent process particularities, this training is to be held on-site. For sites unknown to the trainer, a site inspection is required to analyse customer specific requirements and processes (on-site; duration: one day). This training can be held according to customer's rotating shift schedule.

Curriculum:

Week 1: System Operation

Welcome and organisational information about training

Training overview

BPS System tasks: Counting, sorting, authenticity testing

Structure of the system: CP, QICC/MIC

Explanation of concepts, SSO, SV, OP, FE, Shift, IPP, Pile Mode / Continuous Mode, OPA, OPB, OPBP, OPP

QICC / MIC: SV Menu, OP Menu

Operation manuals

Starting up the Currency Processor (CP) and processing banknotes

Singler stop, emergency stops

Error handling

Jam recovery

Power failure

Consumables replacement

BPS 2000 – Basic Technical Training

Pre-requisites:	Refer to the “Skills Assessment BPS 2000 Maintenance” document
Duration:	4 weeks
Participants max.:	6
Training goals:	After completion of this training the participant will be self sufficient in the repair and maintenance of the BPS 2000 in the areas mechanics, electrics, and pneumatics

Curriculum:

Week 1: Operating the system

Welcome and organisational information about training

Training overview

BPS System tasks: Counting, sorting, authenticity testing

Structure of the system: CP, QICC/MIC, for bank version: MIS

Explanation of concepts, SSO, SV, OP, FE, Shift, IPP, OPP, Deposit, Batch, Reel, Pile Mode / Continuous Mode (dependent on customer requirements).

QICC / MIC: SSO Menu, SV Menu, OP Menu

Starting up the Currency Processor (CP) and processing banknotes

Singler stop, emergency stops

Reports and logs, printouts

Power failure

Consumables replacement

Weeks 2 and 3: Theoretical fundamentals

Components (detectors and actuators)

Transfer section loading module

Transfer section input module

Hoist system input module

Singler area

Singler principle

Transport section

Reject section

Delivery section

Banding

Bundling

Special stacker

Shredder

Automatic flap doors

Pneumatics (Air distribution system)

Electrical overview

High Voltage Supply (HVS)

Low Voltage Supply (LVS)

Control- and synchronisation signals (MAP, SI0)

Module controllers (P-STG, LFC, PMC, DMC, SMC)

Signal tracking

I/O ports, detector and actuator control via monitor

Central unit hardware configuration (GWC/DBC, SYC, SEC and TRC, interfaces)

Software installation, flash load

BN data set

Jams and analysis of the situation by using monitor commands

Most commonly used monitor commands of GWC/DBC, SEC, TRC, SYC

Bank version only: Manual Inspection Station (MIS)

Removal and replacement of assemblies

QICC (Quality Inspection Control Center)

Weeks 3 and 4: Maintenance and adjustment works

Maintenance manual and safety instructions

Disassembly, assembly and adjustment of the singler

Adjustment of banders and bundlers

Gate adjustment

Stacker synchronisation and adjustment

Response time measurement and adjustment of actuators

Analysing sensor failures

Fault tracing and trouble shooting

Preventive and scheduled maintenance

OBIS3 TRAINING

Prerequisites:	
Duration:	2 weeks (10 working days/60 hours)
Participants	max.: 3
Training Goals:	The *emphasis placed in the training measures depends on the previous knowledge and skills of the participants, so that durations given here for the individual training modules must be regarded as approximate only.*
	A detailed breakdown can be provided with knowledge of participants' previous qualifications as appropriate to their future roles. Course targets, content and duration are adapted accordingly. This means that concrete offers are drawn up and submitted by the responsible training personnel in accordance with the respective customer's requirements.

Curriculum:

Hardware and Software

System **Overview**

Duration: 4 hours

Hardware components

Electrical connections

Link to the BPS 2000

Introduction to the Optical Inspection System User Interface (OISUI)

Duration: 3 hours

Main Menu

Online and offline operation

Adjustment mode, calibration mode and production mode

Adjustment Works

Duration: 6 hours

Alignment of camera optics and adjustment of focus

Creation of acquisition parameters

Flat field correction (FFC)

Correction of lens distortion (CLD)

Upload of the calculated parameters

Recording and storage of banknotes

Duration: 2 hours

Memory buffer marked and continuous

OBIS setup parameters

Duration: 1 hour

Adaptation

Basics of banknote inspection

Duration: 3 hours

Master banknote and training set, selective training set

Inspection tree: structure, inspection sequence and hierarchy

Inheritance of inspection items

Working with the OISUI Software

Duration: 4 hours

Inspection of banknotes

Inspection tree, result and graphical window

Blob analysis and error weighting

Creating an adaptation and train in of parameters

Duration: 26 hours

Determination of the training set

Layer principle and inspect regions

Brightness normalisation

Inspection of border layers

Geometrical normalisation of prints by using tie points

Insertion of inspect regions and editing of parameter sets
Masking of optical instable areas (e.g. reflecting foils)
Use of transfer points
Working with projection regions
Serial number inspection
Insertion of measurements and scaling parameters
Use of auxiliary points
Working with denomination dependant regions
Use of variable print characteristics (VPC)
Inspection of banknote size, high running and skew
Statistic region

Miscellaneous

Duration: 3 hours

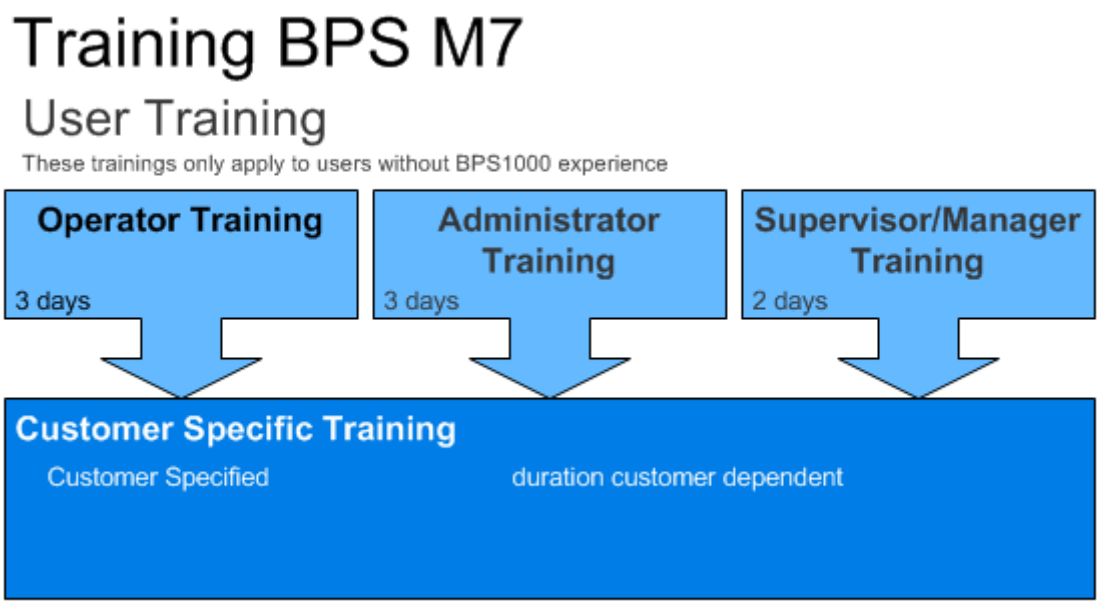
Verification of the adaptation
Error zones and production statistics
Result history and history setup
Upload of parameter set

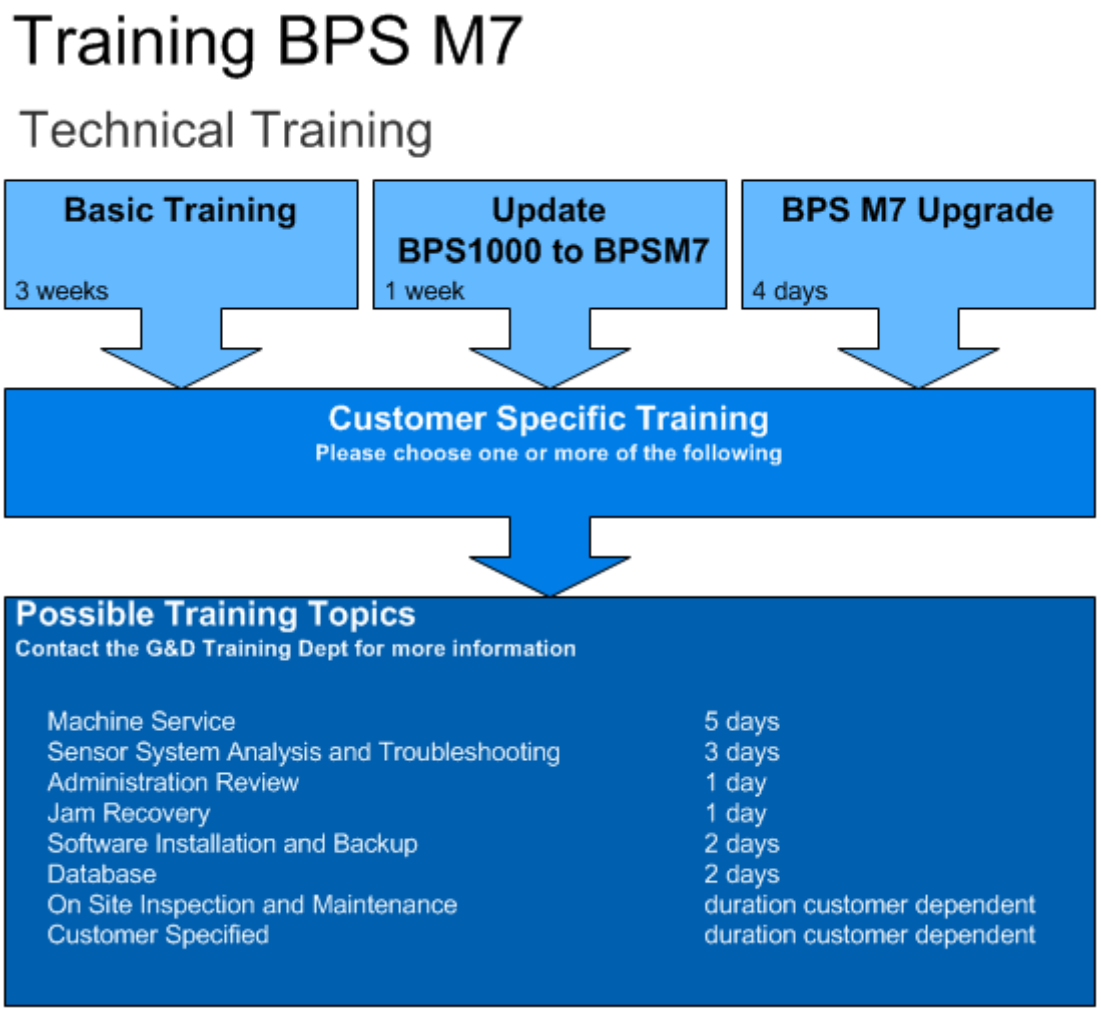
Practical works

Duration: 8 hours

Opportunity to create own adaptation

Training BPS M7





BPS M7 Operator Training

Prerequisites:	Refer to the “Skills Assessment BPS M7 User” document.
Duration:	21 hours (3 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in banknote processing on the BPS M7. They will also be able to identify and solve simple faults.

Training Contents

System overview

Input Module

Operating Module

Delivery Module

Shredder module

Compressed and Suction Air Supply

System start

Power on, log on, banknote processing and finish

Banknote processing

Recovery Procedure

Practical Exercises

End of training course

BPS M7 Administrator Training

Prerequisites:	List of the “Skills Assessment BPS M7 User” document.
Duration:	21 hours (3 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in administration of the BPS M7 user rights list, user groups, creation and personalization of BPS M7 chip cards. They will also be able to identify and solve simple user access faults.

Training contents

System overview

System start

Power on, log on, banknote processing and finish

Menus

Banknote processing

Detailed banknote processing including reject handling

Administration

Chipcard handling and User Rights

End of training course

BPS M7 Supervisor / Manager Training

Prerequisites:	Refer to the “Skills Assessment BPS M7 User” document.
Duration:	14 hours (2 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in banknote processing on the BPS M7. They will also be able to solve banknote recovery processes, interpret reports and logs, identify and solve simple operating failures.

Training contents

System overview

System overview

System start

Switch on system

Processing section

Menu’s

Banknote Processing

Reporting System

Administration

Configuration

Additional options

Unexpected events and Cleaning Procedures

End of training

BPS M7 Basic Technical Training

Prerequisites:	Refer to the “Skills Assessment BPS M7 Basic” document. Notebook with WinXP Pro and administrator rights - Ethernet cross link cable - USB flash drive ≥ 8 GB
Duration:	3 weeks - approx. 100 Hrs. Note: The training duration may be extended to 4 weeks if a translator is required. Please contact the training dept. for more information.
Participants.:	5 (max)
Training aims:	After completion of this training, the participants will be self-sufficient in the repair, maintenance and troubleshooting of the BPS M7 with respect to the mechanical, electrical and pneumatic systems.

System overview

Specifications

Construction

Processing basics

System start and first operation

Banknote Processing complete

Reporting system

Main Menu

Configuration and Administration

Software Tools

Mechanical system

General components

Input module and singler

Operation module

Delivery module and stacker

Bundler unit

LDM and Coupling modules

Shredder unit

Pneumatic system

BPS air system

Air supply module

Electrical system

Power Supply

MPC Hardware

Module controller

Monitoring and control

Sensor system

Sensor Computer System - SCS

Sensors

Measurement system

Software system

Components

Installation

Backup and recovery

Tools

System maintenance

Faults and Troubleshooting

End of training

Update BPS1000 to BPS M7 Technical Training

Prerequisites:	Thorough knowledge of the BPS1000 machine. Notebook with WinXP Pro and administrator rights - Ethernet cross link cable - USB flash drive ≥ 8 GB
Duration:	1 week - approx. 35 Hrs.
Participants:	5 (max)
Training aims:	Participants gain an in-depth understanding of all hardware and software differences to the BPS1000 machine.

System Overview

Description and Technical Data

Global Machine Modifications

Mechanic

Electric

Pneumatic

Module Specific Modifications

Input Module

Operator Module

Delivery Module

Shredder Module

Software

Structure

Installation and Imaging

Tools

Peripheral Devices

Dust Suction Unit

Faults and Troubleshooting

BPS M7 Upgrade Technical Training

Prerequisites:	Thorough knowledge of the BPS1000 machine. Notebook with WinXP Pro and administrator rights. - Ethernet cross link cable - USB flash drive ≥ 8 GB
Duration:	4 days - approx. 28 Hrs.
Participants:	5 (max)
Training aims:	Participants gain an in-depth understanding of the BPS M7 IM/OM modules only.

System Overview

Description and Technical Data

Module Specific Modifications

Input Module

Operator Module

Software

Structure

Installation and Imaging

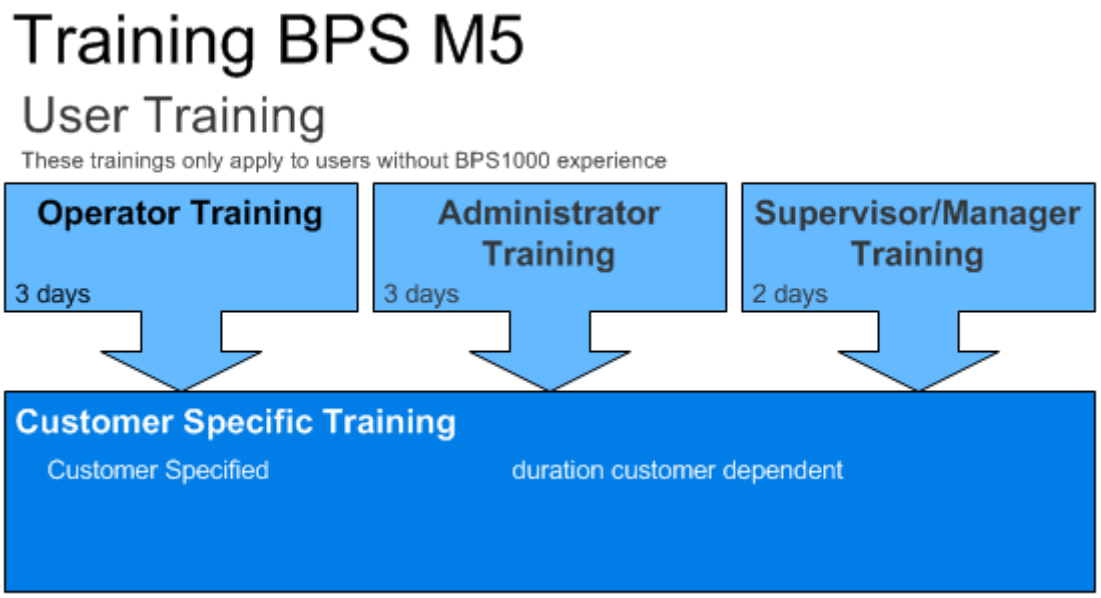
Tools

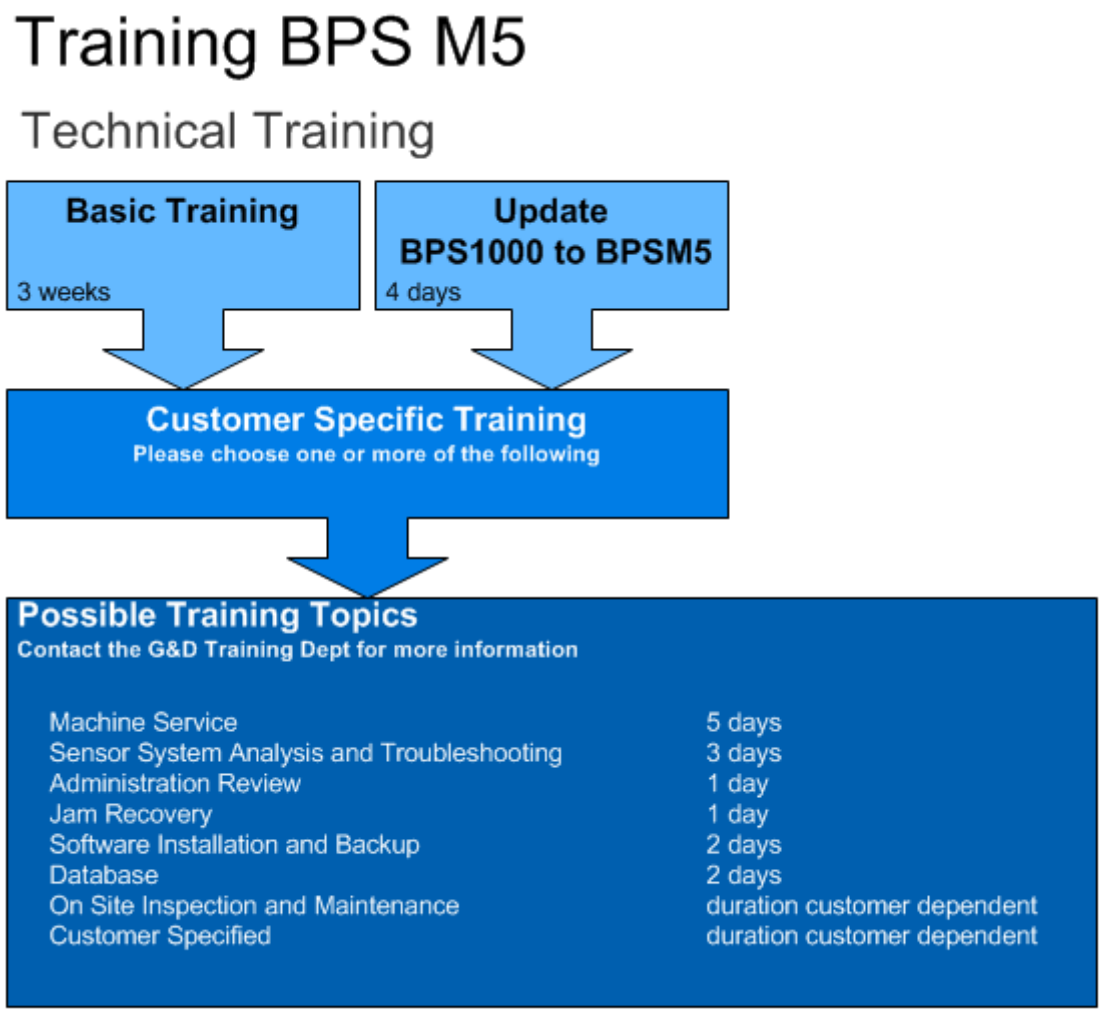
Peripheral Devices

Dust Suction Unit

Faults and Troubleshooting

Training BPS M5





BPS M5 Operator Training

Prerequisites:	Refer to the “Skills Assessment BPS M5 User” document.
Duration:	21 hours (3 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in banknote processing on the BPS M5. They will also be able to identify and solve simple faults.

Training Contents

System overview

Input Module

Operating Module

Delivery Module

Shredder module

Compressed and Suction Air Supply

System start

Power on, log on, banknote processing and finish

Banknote processing

Recovery Procedure

Practical Exercises

End of training course

BPS M5 Administrator Training

Prerequisites:	List of the “Skills Assessment BPS M5 User” document.
Duration:	21 hours (3 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in administration of the BPS M5 user rights list, user groups, creation and personalization of BPS M5 chip cards. They will also be able to identify and solve simple user access faults.

Training contents

System overview

System start

Power on, log on, banknote processing and finish

Menus

Banknote processing

Detailed banknote processing including reject handling

Administration

Chipcard handling and User Rights

End of training course

BPS M5 Supervisor / Manager Training

Prerequisites:	Refer to the “Skills Assessment BPS M5 User” document.
Duration:	14 hours (2 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in banknote processing on the BPS M5. They will also be able to solve banknote recovery processes, interpret reports and logs, identify and solve simple operating failures.

Training contents

System overview

System overview

System start

Switch on system

Processing section

Menu’s

Banknote Processing

Reporting System

Administration

Configuration

Additional options

Unexpected events and Cleaning Procedures

End of training

BPS M5 Basic Technical Training

Prerequisites:	Refer to the “Skills Assessment BPS M5 Basic” document. Notebook with WinXP Pro and administrator rights - Ethernet cross link cable - USB flash drive ≥ 8 GB
Duration:	3 weeks - approx. 100 Hrs. Note: The training duration may be extended to 4 weeks if a translator is required. Please contact the training dept. for more information.
Participants.:	5 (max)
Training aims:	After completion of this training, the participants will be self-sufficient in the repair, maintenance and troubleshooting of the BPS M5 with respect to the mechanical, electrical and pneumatic systems.

System overview

Specifications

Construction

Processing basics

System start and first operation

Banknote Processing complete

Reporting system

Main Menu

Configuration and Administration

Software Tools

Mechanical system

General components

Input module and singler

Operation module

Delivery module and stacker

Bundler unit

LDM and Coupling modules

Shredder unit

Pneumatic system

BPS air system

Air supply module

Electrical system

Power Supply

MPC Hardware

Module controller

Monitoring and control

Sensor system

Sensor Computer System - SCS

Sensors

Measurement system

Software system

Components

Installation

Backup and recovery

Tools

System maintenance

Faults and Troubleshooting

End of training

Update BPS1000 to BPS M5 Technical Training

Prerequisites:	Thorough knowledge of the BPS1000 machine. Notebook with WinXP Pro and administrator rights - Ethernet cross link cable - USB flash drive ≥ 8 GB
Duration:	4 days - approx. 28 Hrs.
Participants:	5 (max)
Training aims:	Participants gain an in-depth understanding of all hardware and software differences to the BPS1000 machine.

System Overview

Description and Technical Data

Global Machine Modifications

Mechanic

Electric

Pneumatic

Module Specific Modifications

Input Module

Operator Module

Software

Structure

Installation and Imaging

Tools

Peripheral Devices

Dust Suction Unit

Faults and Troubleshooting

Nota Tracc L Technical Training

Prerequisites:	*Refer to the "Skills Assessment BPS M7 Basic" document.*
	Notebook (XP-Professional with full Admin Rights)
	We do also recommend safety shoes for the participants
Duration:	*4 Days - approx. 32 Hrs.*
	Note: The training duration may be extended to 5 Days if a translator is required. Please contact the training dept. for more information.
Participants.:	*5 (maximum !!!)*
Training aims:	*After completion of this training, the participants will be self-sufficient in the repair, maintenance and troubleshooting of the NotaTracc L Module with respect to the mechanical, electrical and pneumatic systems.*

General Information — Day 1

Daily Schedule
Overview of training schedule and content
Training room security and safety

System overview

System Explanation

Operating Elements
Covers / Doors
Service Door
Slider

Introduction Trays

Sizes
Module Installation
Options: Seperators; Cover; NFC-Chip; RFID-Card
Guiding Grooves
Lateral Hangers

System Start and Banknote Processing

Explanation of Functional Sequence

Selection of Input and OP-Mode
Operating elements
Banknote processing with close Covers

Explanation of the BPS Interface including Connections and Changes in the Singler Area

Machine Connectios / Modifications

Mechanical Connection and Adjustment
Power Connection; CAN-Bus
Pressurized Air
LCF Plate; additional Light Barrier

Explanation of the complete Mechanical Transport Sequence

Tray Transport; Lifts
Horizontal Transport; Shaker
Gripper; Seperator detection
Module movement electrical / mechanical

Pneumatic Elements

Main Valve; Pressure Monitoring
Cylinders and Valves

Electrical / Electronic Components

MDC / CAN Bus
Power Supply / UPS
Omron Safety System Door Contacts
Seperator detection Boards
Motors and their functions
Camera
Interface Board

Technical Documentation / Electrical Drawings — Day 2

Flow Charts
Detectors; Light Barriers;Switches; Fuses
Electrical and Pneumatical Drawings

Mechanical Adjustments — Day 3 + 4

E-Test

Work project: Try all Functions available with E-Test

Parts exchange

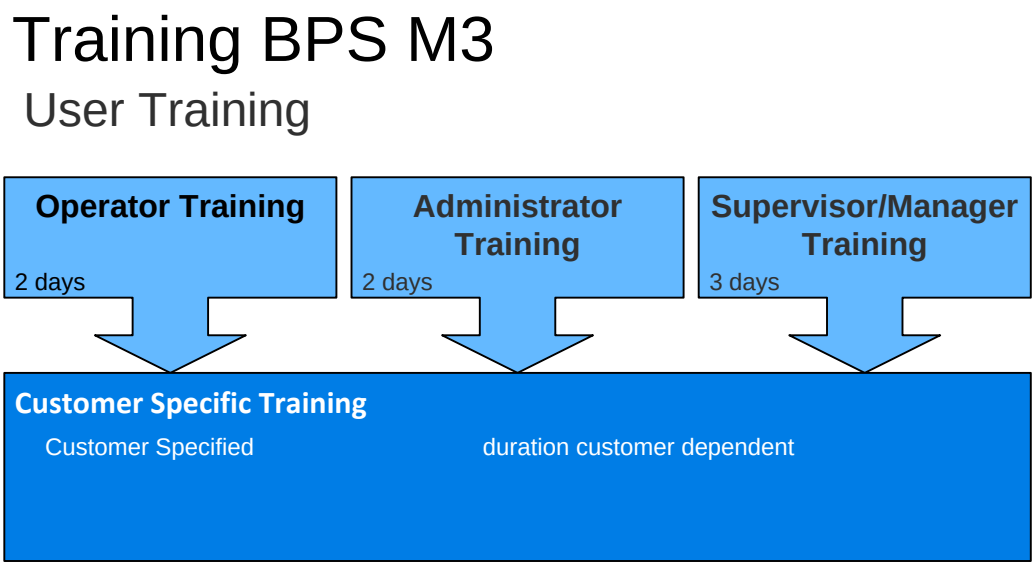
Flat Belts horizontal
Tooth Belts Gripper
Tooth Belt Module Move
Seperator detection

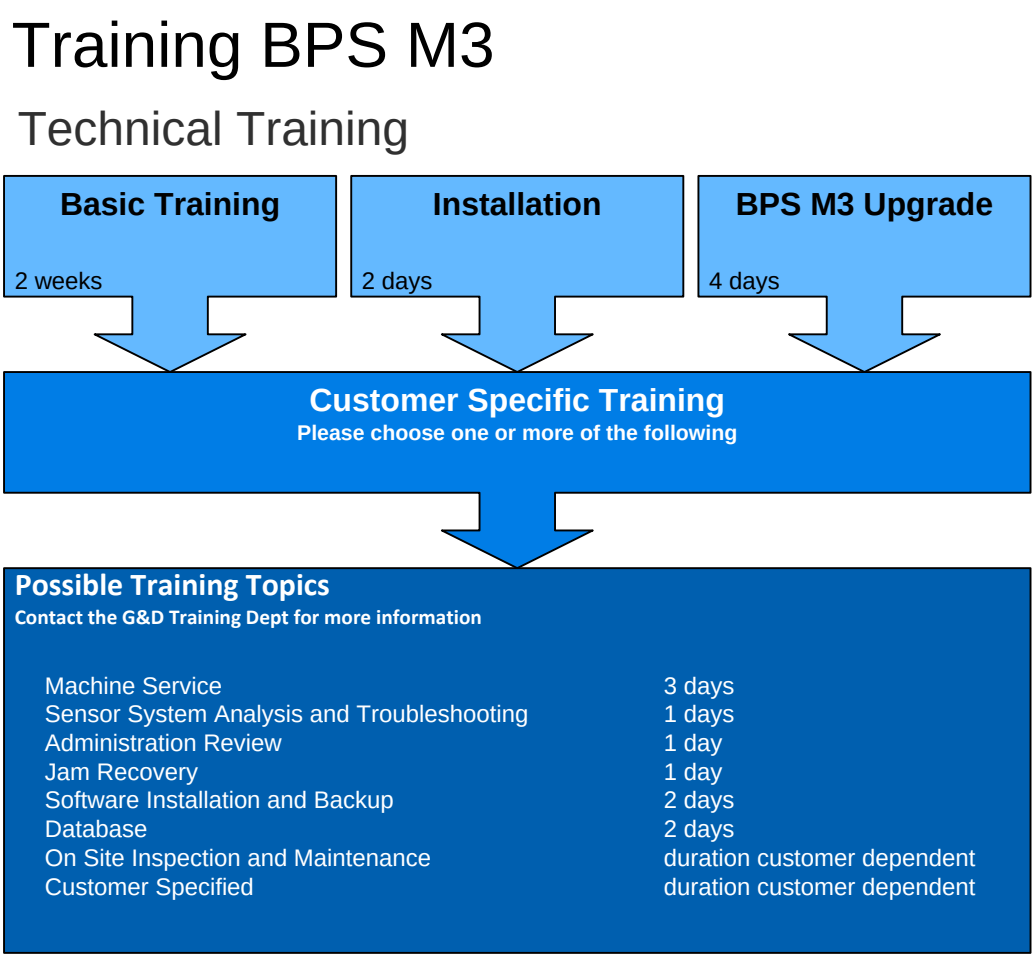
Summary

Questions and Answers

END

Training BPS M3





BPS M3 Operator Training

Prerequisites:	Knowledge about BN Processing.
Duration:	16 hours (2 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in banknote processing on the BPS M3. They will also be able to identify and solve simple faults.

Training Contents

System overview

Input Module

Operating Module

Delivery Module

Compressed and Suction Air Supply

System start

Power on, log on, banknote processing and finish

Banknote processing

Recovery Procedure

Practical Exercises

End of training course

BPS M3 Administrator Training

Prerequisites:	Knowledge about BN Processing.
Duration:	16 hours (2 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in administration of the BPS M3 . They will also be able to identify and solve simple user access faults.

Training contents

System overview

System start

Power on, log on, banknote processing and finish

Menus

Banknote processing

Detailed banknote processing including reject handling

Administration

Manage user Rights with the Control Center
Create Opmodes

End of training course

BPS M3 Supervisor / Manager Training

Prerequisites:	Knowledge about BN Processing
Duration:	24 hours (3 days)
Participants:	5 (max.)
Training aims:	After completion of this training course, the participant will be self-sufficient in banknote processing on the BPS M3. They will also be able to solve banknote recovery processes, interpret reports and logs, identify and solve simple operating failures.

Training contents

System overview

System overview

System start

Switch on system

Processing section

Menu’s

Banknote Processing

Reporting System

Administration

Configuration

Additional options

Manage user Rights with the Control Center
Create Opmodes

Unexpected events and Cleaning Procedures

End of training

BPS M3 Basic Technical Training

Prerequisites:	Refer to the “Skills Assessment BPS M7 Basic” document (also Valid for BPS M3). Notebook with Win 7 or higher and administrator rights - USB flash drive 64 GB
Duration:	2 weeks - approx. 80 Hrs. Note: The training duration may be extended to 3 weeks if a translator is required. The duration of the training can be shortened by 3 days. The prerequisite for this is a successful completion of the BPS M3 Update e-learning module. Please contact the training dept. for more information.
Participants.:	5 (max)
Training aims:	After completion of this training, the participants will be self-sufficient in the repair, maintenance and troubleshooting of the BPS M3 with respect to the mechanical, electrical and pneumatic systems.

System overview

Specifications

Construction

Processing basics

System start and first operation

Banknote Processing complete

Reporting system

Main Menu

Configuration and Administration

Software Tools

Mechanical system

General components

Input module and singler

Operation module

Delivery module and stacker

Bander unit

LDM and Coupling modules

Pneumatic system

BPS air system

Air supply module

Electrical system

Power Supply

MPC Hardware

Module controller

Monitoring and control

Sensor system

Sensor Computer System - SCS

Sensors

Measurement system

Software system

Components

Installation

Backup and recovery

Tools

System maintenance

Faults and Troubleshooting

End of training

BPS M3 Installation Training

Prerequisites:	Refer to the “Skills Assessment BPS M7 Basic” document (also Valid for BPS M3). Notebook with Win 7 or higher and administrator rights - USB flash drive 64 GB
Duration:	2 days - approx. 16 Hrs.
Participants:	5 (max)
Training aims:	Participants are available to unpack the machine and install all modules in the right order. After the installation they are able to test the System.

Installation

Site and facility requirements

Modules description

Unpack the Modules

Mount the modules

Mount flat- and round belts

Connect compressed and suction air

Power connection

Test the System

BPS M3 Upgrade Technical Training

Prerequisites:	Refer to the “Skills Assessment BPS M7 Basic” document (also Valid for BPS M3). Good experience on BPS 1000 or BP M … Machines Notebook with Win 7 or higher and administrator rights - USB flash drive 64 GB Note: This training will also be available as an e Learning. Please contact the training dept. for more information.
Duration:	4 days - approx. 32 Hrs.
Participants:	5 (max)
Training aims:	Only the differences to the M machines or BPS 1000 Machines will be shown.

System Overview

Description and Technical Data

Module Specific Modifications

Input Module

Operator Module

Software

Structure

Installation and Imaging

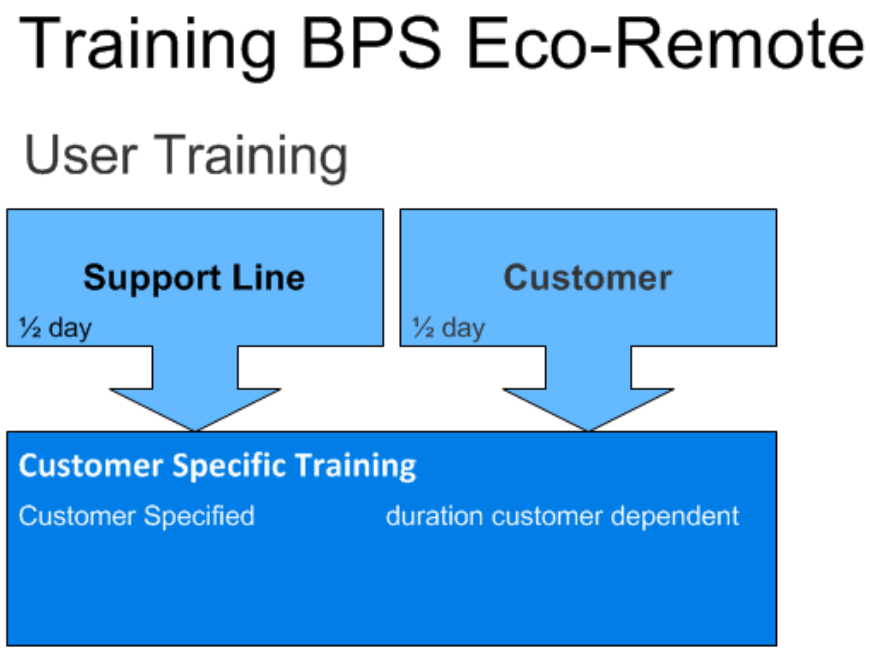
Tools

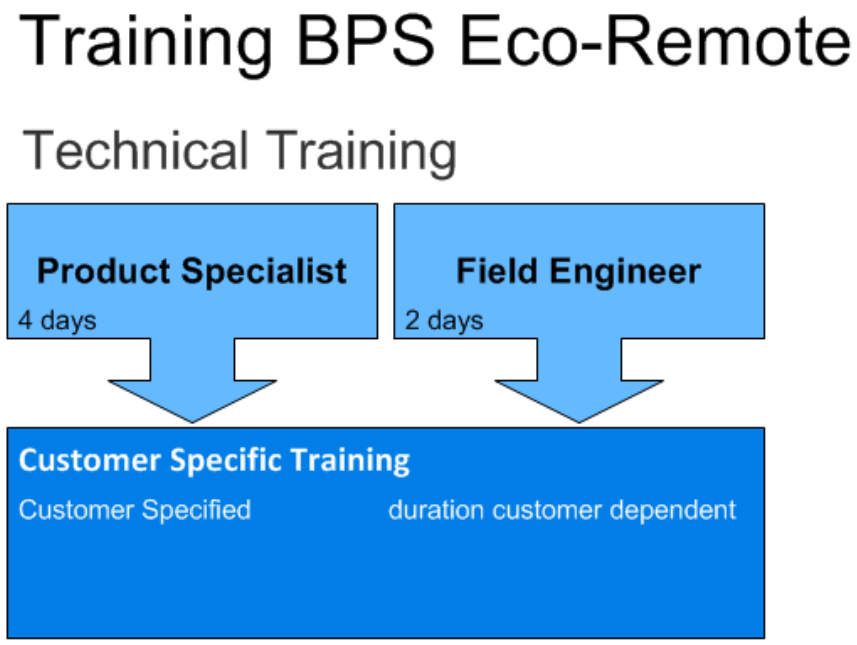
Faults and Troubleshooting

BPS M3 Upgrade Technical Customer specific Training

Please apply for a customer specific training at the G & D Trainings center.

Training BPS Eco-Remote





BPS Eco-Remote Support Line

Prerequisites:	Basic knowledge of computers and IT networks.
Duration:	4 hours
Participants max.:	4
Training aims:	After completion of this training course, the participant will be self-sufficient in the use of the BPS Eco-Remote system regarding Remote Sessions to the BPS machines.

Training contents

System overview of the BPS Eco-Remote system

Account logon and access to the RAS Enterprise server

Establishing and managing remote sessions

Overview of the Policy Server

Practice sessions

End of training

BPS Eco-Remote Customer

Prerequisites:	Basic knowledge of computers.
Duration:	4 hours
Participants max.:	4
Training aims:	After completion of this training course, the participant will be self-sufficient in the use of the Policy Server for the BPS Eco-Remote system.

Training contents

System overview of the BPS Eco-Remote system

Policy Server

- Access and logon
- Defining policies
- Creating users and user groups
- Managing remote sessions
- Analysis of the Audit log

End of training

BPS Eco-Remote Product Specialist

Prerequisites:	Good knowledge of computers and IT networks.
Duration:	4 days (32 hours)
Participants max.:	4
Training aims:	After completion of this training course, the participant will be self-sufficient in the installation, configuration, use, and support of the BPS Eco-Remote system.

Training Contents

System overview of the BPS Eco-Remote system

Review of network fundamentals

Account logon and access to the RAS Enterprise server

G&D RAS Server installation

Windows RAS Server installation

Policy Server Installation

Policy Server Configuration and Management

Software Management

Establishing and managing remote sessions

Training overview for all user groups

Troubleshooting

End of training

BPS Eco-Remote Field Engineer

Prerequisites:	Basic knowledge of computers and IT networks.
Duration:	2 days (16 hours)
Participants max.:	4
Training aims:	After completion of this training course, the participant will be self-sufficient in the installation, configuration, and use of the Eco-Remote system.

Training Contents

System overview of the BPS Eco-Remote system

Review of network fundamentals

Account logon and access to the RAS Enterprise server

G&D RAS Server installation

Windows RAS Server installation

Policy Server Installation

Establishing and managing remote sessions

Basic Troubleshooting tips

End of training

BPS Eco-Protect

Prerequisites:	Good knowledge of computers and IT networks.
Duration:	8 hours
Participants max.:	4
Training aims:	After completion of this training course, the participant will be self-sufficient in the installation and configuration of the BPS Eco-Protect system.

Training contents

System overview of the BPS Eco-Protect system

Review of network fundamentals

Overview of FTC / FTP / SFTP

System Installation

System Configuration

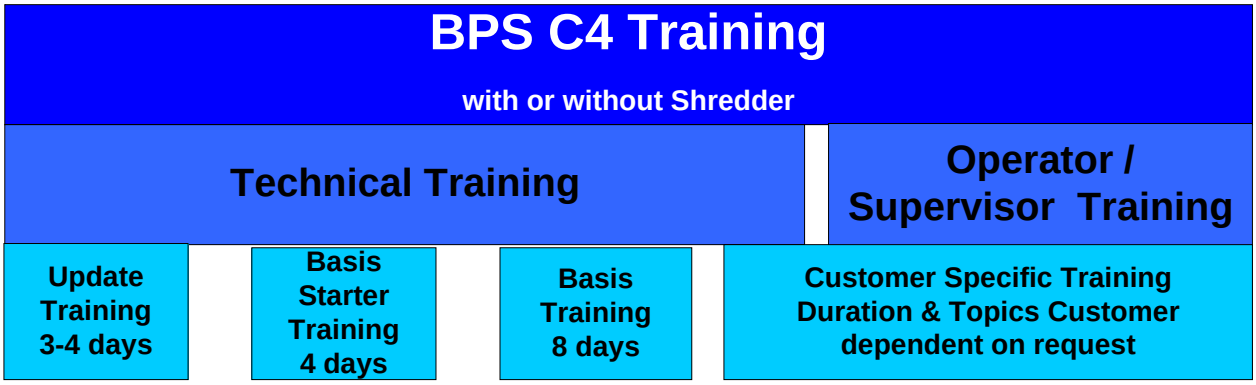
Exporting and importing configurations

Eco-Protect with Eco-Remote

Troubleshooting

End of training

Training BPS C4



Update BPS 200 to BPS C4 / BPS C4-STechnical Training

Prerequisites:	Thorough knowledge of the BPS 200 machine
Duration:	3 days
Participants.:	4 (max)
Training aims:	After completion of this training, the participants will be self-sufficient in the repair, maintenance and troubleshooting of the BPS C4 and / or BPS C4-S with respect to the mechanical, electrical and pneumatic systems.
Objectives:	The Participants will learn the news and differences between BPS C4 / BPS C4-S and BPS 200. Installation of Software, background information of Windows CE and operation of the system will be trained. The troubleshooting with the help of the internal service tool will be trained as well

Training Contents

Got to know BPS C4

Overview

Menus

BPS C4 Service Stick and Toolbox

OMOCO

Software Installation / Software Update

Windows CE specialties

Trouble Shooting

Practical Work

Shredder (optional)

End of training

BPS C4 / BPS C4-S Basic Starter Training

Prerequisites:	Technical understanding in mechanics, Software and Computers.
Duration:	4 days
Participants max.:	4
Training goals:	After completion of this training, participants will be self-sufficient in banknote processing on the BPS C4 /BPS C4-S. They will also be able to adjust and maintain the machine and do smaller repairs as well.
Subsequent trainings:	Advanced- or Update Training

Training contents

Introduction

Presentation BPS C4

Site and facility requirements

Transport of the machine

System operation

Practical demonstration – processing a deposit

Operation modes configuration (OMOCO)

Protocols

Service menu

Shredder Optional

Repairs, removals and adjustments

Singler, round belts, flat belts, limpness sensor

Component location, item removal and replacement

Shredder Optional

Electric and electronic systems

Power supply

Module controller MDC

Power PC, CAN BUS, MAP 2

Shredder Optional

Sensor Unit

Assembly, disassembly

Cleaning

System software

Service software

Operating system Windows CE

Error codes, database

Hyper terminal

Service tools and troubleshooting

Using the service tool test procedures to check the machine

System maintenance

Maintenance procedures and adjustments

Options

Air supported singler

LDM (Large Delivery Module)

LPS (Limpness Sensor)

Shredder Optional

End of training

BPS C4 / BPS C4-S Basic Technical Training

Prerequisites:	Technical understanding in mechanics, Software and Computers.
Duration:	8 days
Participants max.:	4
Training goals:	After completion of this training, participants will be self-sufficient in banknote processing on the BPS C4 /BPS C4-S. They will also be able in repair and maintenance.
Subsequent trainings:	Advanced- or Update Training

Training contents

Introduction

Presentation BPS C4

Site and facility requirements

Transport of the machine

User operator training

Supervisor training

System operation

Practical demonstration – processing a deposit

Operation modes configuration (OMOCO)

Protocols, printing and explanation

Service concept, interface, menu

Shredder Optional

Repairs, removals and adjustments

Singler, round belts, flat belts, limpness sensor

Stacker and failsafe

Component location, item removal and replacement

Shredder Optional

Electric and electronic systems

Power supply

MAT generator

Module controller MDC

Power PC, CAN BUS, MAP 2

Shredder Optional

Sensor Unit

Function

Assembly, disassembly

Cleaning

Practical training

System software

Customer laptop adjustments

Service software

Operating system Windows CE

Error codes, database

Hyper terminal

Service tools and troubleshooting

Problems with fit/unfit sorting

Using the service tool test procedures to check the machine

Presentation of realistic problems for troubleshooting guide

System maintenance

Maintenance procedures and adjustments

Options

Fast deposit processing FDP

Header card deposit processing HDP

Air supported singler

LDM (Large Delivery Module)

LPS (Limpness Sensor)

SFS (Soil and Stain Sensor)

Ticket Reading (CCD Camera)

Shredder Optional

End of training

BPS C4 / BPS C4-S Customer specific Training

Please apply for a customer specific training at the G & D Trainings center.

BPS C1 Starter Training

Prerequisites:	Thorough understanding in software and computers
Duration:	1 day
Participants.:	4 (max)
Training goals:	After completion of this training, the participants will be self-sufficient in the banknote processing on the BPSC1. The participants will also be able to install and update the BPS C1 in software regards.

Training Contents

Operating / Software

Sorting/Counting, Tickets, SerNo, cheques

Configuration/Settings

Software-Installation on Notebooks

PC-Suite with
- BPSC1-Update
- BPSC1-Upgrade

Update with SD-Card
Adaptation process

BPS C1 Technical Training

Prerequisites:	Thorough understanding in mechanics, software and computers
Duration:	2 days.
Participants.:	4 (max)
Training goals:	After completion of this training, the participants will be self-sufficient in the banknote processing on the BPSC1. The participants will also be able to repair, adjust and maintain the BPS C1 in mechanical and software regards.

Training Contents

Day 1: Operating / Software

Sorting/Counting, Tickets, SerNo, cheques

Configuration/Settings

Software-Installation on Notebooks

PC-Suite with
- BPSC1-Update
- BPSC1-Upgrade

End User Tool with
- Interfaces: API, XML, Reports

Update with SD-Card
Adaptation process

Day 2: Hardware / Test

Disassembling
- Parts replacement
- Adjustments

Maintenance Menu
- Component Test
- Calibration

Numeron Operator / Supervisor Training

Prerequisites:	none
Duration:	1 day
Participants:	4, max. 6

Curriculum:

Presentation Numeron

Duration: 1 hour

Presentation of Numeron

Feature of Numeron

Processing a Deposit

Operator Training

Duration: 3 hours

Machine Safety

PMI pictogram introduction

Printing and explanation of protocols

Jam recovery

Explanation of the error codes

Machine adjustments by operator

User operation training

Daily checks, cleaning

Supervisor Training

Duration: 3 hours

Creating OP modes

Changing thresholds, machine settings etc.

More printouts

Adjustment

Typical Errors

Practical supervisor training

Fitness sorting settings (option)

Numeron Technical Training

Prerequisites:	PC (with WinXP Pro / Win7 / Win10 and network connectivity, serial com port, administrator rights) Windows knowledge and Network knowledge.
Duration:	21 hours (3 days)
Participants:	4, max. 6

Curriculum:

System operation

Duration: 5 hours

Practical demonstration

Processing a deposit

Operator training

Machine safety
Daily checks
PMI pictogram introduction
User operation training

Supervisor training

Creating operation modes
Changing thresholds, machine settings etc.

System maintenance, repairs, removals and adjustments

Duration: 8 hours

Basic Numeron and CashRay theory

Component location; item removal and replacement

Disassemble & assemble machine parts

Machine testing

Routine maintenance procedures and adjustments

Service concept, contracts (optional)

System software

Duration: 8 hours

Setup Service Laptops (Technician)

Software introduction

Numeron software installation

Update Numeron firmware

Prepare multi currency adaptations

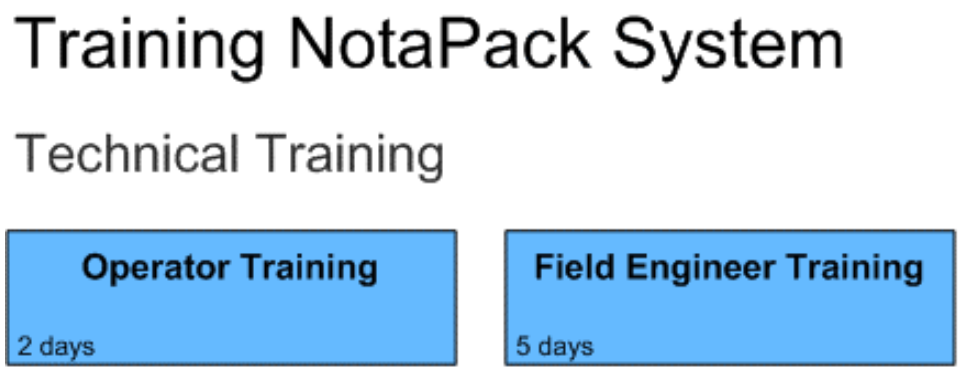
CashRay 180 software and adaptation installation

Software update via ftp client

Using SenAdapUA – obtaining raw data from banknotes

Connecting Numeron to network, settings (optional)

Training NotaPack 10 System



NotaPack 10 Operator Training

Prerequisites:	none
Duration:	12 hours (2 days)
Participants max.:	6
Training goals:	After completion of this training, participants will be self-sufficient in operation of the NotaPack 10 together with an installed banknote processing system BPS 1000. They also will be able to identify and solve simple disturbances and perform basic cleaning jobs

Curriculum:

System overview

Documents

User manual

System overview

Safety rules of Notapack 10 System
Module overview
System demonstration

Basic functions of the modules

Module 1 feeding
Module 2 label printer
Module 3 sealing and shrinking
Module 4 lift
Module 5 and 6 bundle transport

Operation of NotaPack 10 system

NotaPack 10 settings and system start

- Controllers and safety elements
- Basic settings on Modul 3
- Printer and Modul 1 settings
- Working with automatic mode

Handling details and sealing procedure

- Package transport and monitoring
- Sealing procedure

Maintenance and Disturbances

Maintenance and replacements

- Cleaning according the user manual
- Replacement of consumables

System handling and disturbances

- Manual input and service mode activation
- Operating disturbances
- Error messages
- Cancelling bundles

NotaPack 10 Field Engineer Training

Prerequisites:	Refer to the “Skills Assessment NotaPack Basic” document.
Duration:	48 hours (8 days)
Participants max.:	6
Training goals:	After completion of this training, the participants will be self-sufficient in repair and maintenance of the of the NotaPack 10 with respect to electrical, mechanical and pneumatic system components They also will be able to identify and solve mechanical and electrical problems.

Curriculum:

System overview

Documents

- User Manual, Service Manual and Site and Facility Requirements
- Electrical and pneumatic drawings
- CD with manuals of all external devices

Basic function

- Safety rules of NotaPack 10 System
- Module overview
- System demonstration

Operation

Settings and system start

- Controllers and safety elements
- Basic settings on Modul 3
- Printer and Modul 1 settings
- Service key and automatic mode
- Display information and package monitoring

Components and supply

Electric system components

- Monitoring elements
- Drive systems

Power supply and control

- Power supply and modul connection
- Control principles / SPS
- Emergency loop and PNOZ
- Service key

Pneumatic system

- Pneumatic supply
- Valves and cylinders

Module details

Module 1 Feeding module

- Mechanical design
- Drive unit
- Start settings and bundle monitoring
- Connection to BPS System

Module 2 Printer

- Function and label application system
- Static print principle and settings
- Dynamic print principle and settings
- Connection to Modul 1 switchbox

Modul 4 Lift

- Mechanical design and function
- Safety cylinder
- Manual input mode

Module 3 Sealing and Shrinksystem

- Mechanical design and working principles
- Foil application and winding adjustments
- Sealing and shrinking details

Modul 5 and 6 Feeding modules

- System extension with Modul 5 and Modul 6
- Mechanical design and function of Modul 5
- Mechanical design and function of Modul 6

Operating panel and operation modes

- Main overview and Menu parameters
- Settings of operating parameters
- Automatic mode
- Manual operation / Service mode
- Settings and sealing results

Error messages and troubleshooting

Error messages

- Display of error messages
- List of error messages

Disturbances and troubleshooting

- Undefined disturbances at external modules
- Operating disturbances at Modul 3
- Sealing disturbances
- Cancelling BN bundles

Replacement and adjustments

Consumables

- Foil replacement
- Printer (Label strip and transfer ribbon)

Replacement of parts

- Cylinder and valve replacements
- Sensor and motor replacement
- Sealing bar and heater coil for shrink tunnel
- Hotline information of manufactorer (Ruhlamat)

Adjustments

- Adjustments within the transport system
- Mechanical adjustments of Modul 3
- Settings of the temperature controllers

Cleaning and maintenance

Cleaning procedures

Regular cleaning

Maintence

Daily maintenance
Weekly maintenance
Monthly maintenance
Three month maintenance
Six month maintenance

End of training course