



## **SAM** **SORTING ADDRESS MANAGEMENT SYSTEM**

SAM is a product developed by Selex ES for the productive management of data used by postal automation coding systems like address directories, delivery routes, coding depth determination data for OCR and VCS, by automated sorting systems like sorting programs for letters, flats, parcels, trays, bundles, rolls and any relevant mail mix, and by devices for sorting operational support (T&T workstations, manual process support boxes and pigeon holes).

Equipments for physical items sorting are useless without the sorting plans that make them operate. Optimizing the number of processing phases needed to achieve sorting targets, cutting costs and reducing the lead-time are the topics of any smart sorting strategy.

An effective sorting strategy conceived by postal and logistic process engineering teams can be difficult to be implemented and deployed when several sorting technologies and sorters coexist at operational level.

Furthermore, sorting program specification activity cannot be efficient and error-protected, because sorting decision makers may be asked to write down quite complex and long sequences of sort codes and separation identifiers during the sorting design strategy implementation phase.

The interdependence of sorting plans in different sorting centers means that changes are complex and must also be simultaneous. Modifications must also be carried out swiftly to increase productivity and process quality.

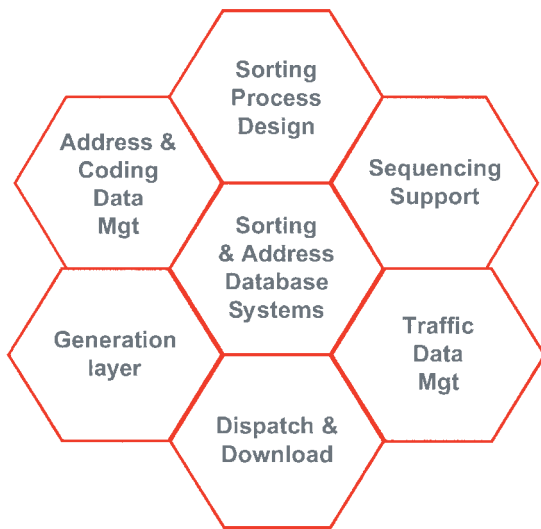
SAM enables expert postal staff to transfer their knowledge to machines without needs of technical specific skills on sorting programs.

It provides a solution for:

- Rapid creation of new sorting programs
- Consistency of sorting program sets (actual coverage of destinations that can be coded by OCR/VCS)
- Consistency of sorting program sets for each center (coverage between outward and inward destinations and inside complex inward and sequencing pass).

SAM is a central system: its users can operate both centrally and in sorting centers. Users must be trained but they don't need to be either IT or postal process experts.

## Functional Architecture



### SAM FUNCTIONS AND FEATURES

#### Easy sorting process design

- Simple, clear design cycle
- Automatic validation of sorting programs against coding directories
- Automatic validation of sorting programs against sorting programs
- Multi-attribute based sorting programs.

#### Scalability

- No need to modify system operation and roles during program transition leading to define multi- product sorting strategies over a complex network of sorting centers.

#### Extensibility

- Support for remote video-coding centers
- Support for distribution centers (sequencing)
- Application to manual sorting processes (sorting process design and label management).

#### Controlled download

- Monitoring of all operational coding directories and sorting programs currently active on each sorting center
- Versioning and consistency management among directories and sorting programs
- Optimized data transfer from sorting planning and administration level to sorting centers operational level.

#### User group management

- Role-based function management and enabling
- All functions can be accessed wherever there is a SAM client workstation, according to user group permissions.

#### Data management

- Design/test/operation mode for stabilizing huge address and organisational data changes and/or corrections
- Back-up, backtrack and history of modifications
- All actions on relevant data in the system can be saved and retrieved.

#### HOW IT WORKS - MAIN CONCEPTS

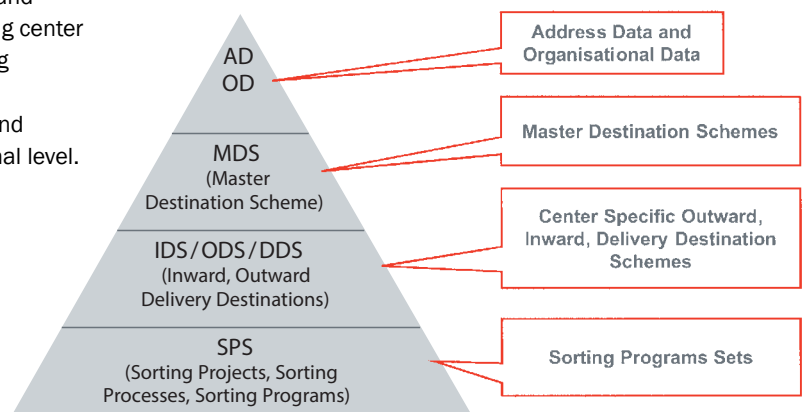
The main feature of the system is the capability to handle the items destinations that each sorting center should separate for other centers during operations. This list is called a Master Destination Scheme (MDS) and must be defined at central level.

Based on this list, for each sorting center, users have to define the list of destinations / separations:

- The center actually receives from other existing centers(Inward Destinations Scheme, IDS)
- The center actually produces for others (Outward Destinations Scheme, ODS)
- The center actually produces for its own delivery area (Delivery Destinations Scheme, DDS).

Users can easily define each Scheme type by selecting the desired sets of destinations from the main destination catalog, which is automatically created from organisational and address data through hierarchical data models managed by the SAM database system.

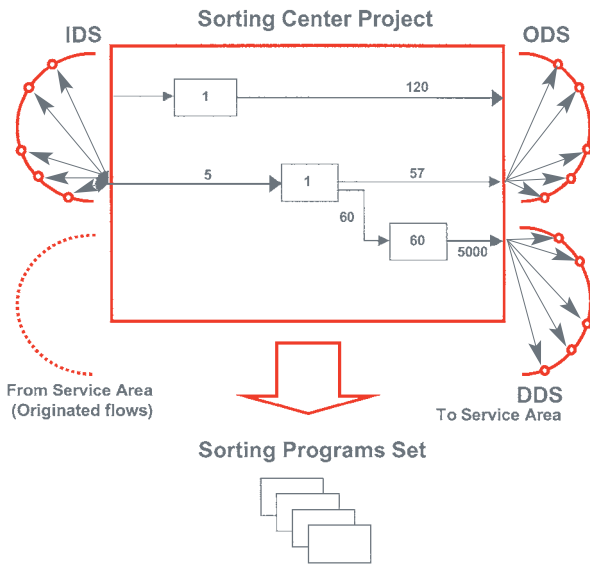
## Basic Data Hierarchy



At central level, the system controls and monitors the sorting process between centers. Differences between the master (MDS) and local schemes (IDS/ODS), declared and proposed by each center, are reported to central users by the system.

Central users can accept them (publish them for use in sorting program definition) or refuse them (not publish them, so that they cannot be used in the sorting program definition phase).

### Modeling of Sorting Process



The destination schemes for a center are very important - they are interpreted as the “boundary” constraints with which each sorting program set must be compatible. This allows very good control of user errors and/or incorrect design of the sorting process for a sorting center. Sorting projects are performed at each sorting center by assigning official destinations for the center (listed in the published ODS/DDS) to sorting machine outlets.

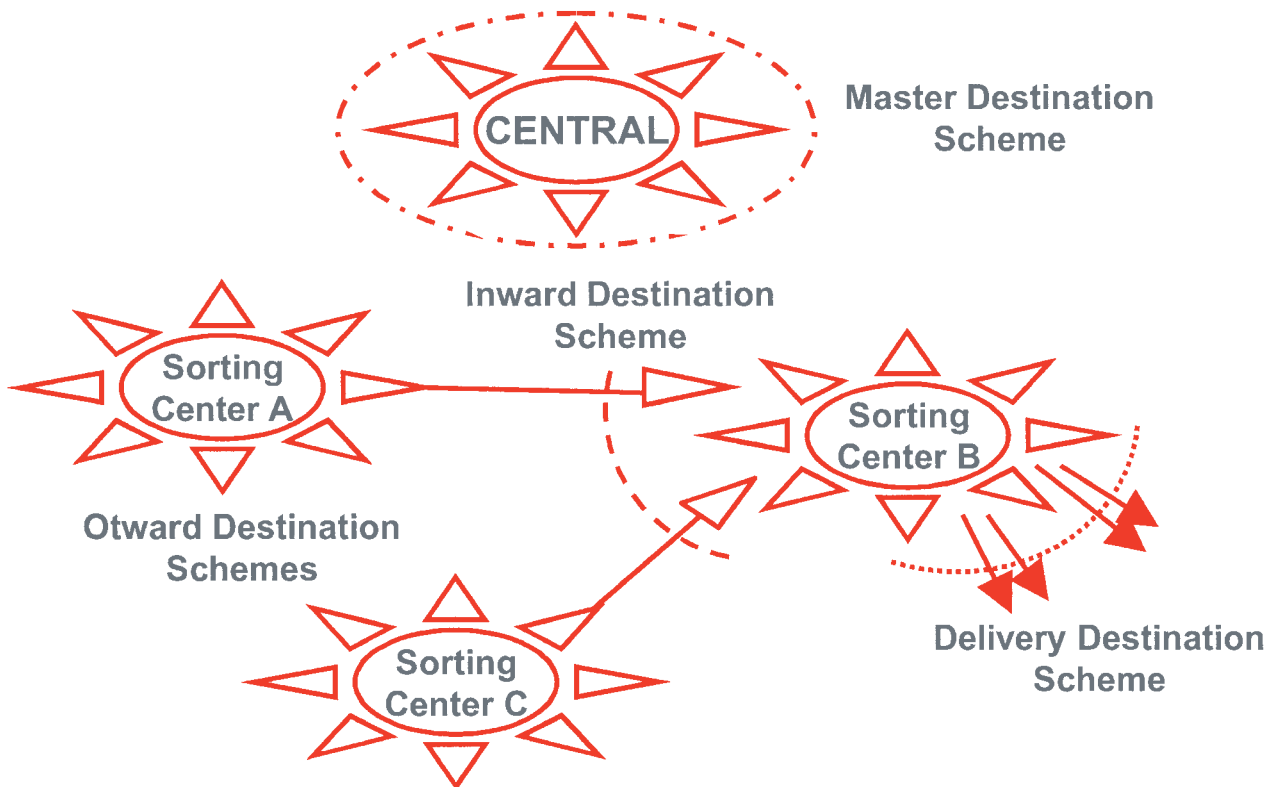
#### Designing the sorting processes

Sorting program creation is independent of specific machine types. The generation modules plugged into the system can convert a generic sortplan format into machine specific formats.

Sorting program design activity is very efficient and error protected, because users are never asked to write down long sequences of sort codes and numerical outlets during the sorting design phase.

User activities involve only selection, naming, dragging and dropping.

### Destinations Schemes



## **INTEGRATION WITH TARGET SYSTEMS PRODUCED BY OTHER VENDORS**

SAM can easily be integrated in highly dynamic operating environments, simply by customizing specific format generation modules at central level and interfacing target systems (OCR, VCS, sorting machines) at local level.

## **INTERFACING IT ENVIRONMENTS**

SAM can manage multiple external interfaces with many types of proprietary or non-proprietary Information System (future or under development).

Process-oriented data interface systems:

- Integrated coding services architectures supporting address (OCR/VCS) and indicia capture
- Machine supervision nodes systems for sorting equipment.

Systems providing internal services for postal administrations:

- National data warehouses for business intelligence and reporting
- Production and logistics support
- Mail traffic and quality measurement
- Mail delivery support
- Automated and non-automated help desks
- Long term production planning.

## **SAM VALUE-ADDED MODULES**

### **Sorting process design**

- Graphical user interface to define sorting needs at sorting center network, delivery office and letter carrier level, right through to the definition of individual delivery points
- Create sorting programs easily and rapidly
- Create display and label contents easily and rapidly
- Check sorting process comprehensiveness and consistency at central level.

### **Sequencing support**

- Delivery point management
- Sequencing program generation & optimization.

### **Traffic data management**

Traffic frequency data import for each destination to support sorting program design.

## **SAM MAIN TECHNICAL DATA**

### **System technologies**

- Based on Microsoft® platforms
- Use of basic COTS technologies
- Highly scalable HW infrastructure
- TCP/IP based LAN/WAN middleware
- MS SQL server® DBMS
- XML-based data interfaces

### **System manageability**

- Compatible with IT system management solutions (WMI)
- Remote software deployment enabled

### **Networking**

- LAN bandwidth: 10/100/1000Mbps
- WAN bandwidth (min. from central): 0.5Mbps.

Note: Networking requirements can vary according to specific application throughputs and exchanged data volumes.