

Concept for Screening Van

Document Scope

This concept outlines SIM's Screening Van, an innovative solution that integrates the security equipment (metal detector, luggage scanner, etc.) usually found at an into a mobile van.

Base Vehicle

Van, 5 ton class

Long wheelbase, long rear overhang, high roof,
sliding doors left and right,
comfort seats for driver and co-driver,
air conditioning

Example:

Mercedes Benz Sprinter 515 CDI 4x2
GVW 5.500 kg,
110 kW Diesel Engine, Euro-3 homologation,
LHD steering,
6 gear manual transmission,
super-high roof,
color silver

Typical Dimensions:

Length: 7.41 m

Width: 2.43 m incl. mirrors

Height: 3.32 m



Vehicle Conversion



Black glazing of driver's cabin windscreen and windows

4 individually controllable hydraulic cylinders (2x front, 2x rear) for balancing of vehicle when parked on uneven terrain

Electric sliding doors left & right
Electric entrance steps left & right
Electric awnings left & right

The sliding doors, entrance steps, awnings and hydraulic stabilization can be controlled by switches from the operator's cabin.

Roller blinds, manually operated, on each side to cover pass-through of X-ray scanner when unused

Interior plywood floor, weight-reduced furniture and partition walls (lamine-coated plywood, Interior walls and roof in silver color

Operator's working desk in L-form, equipped with display monitor for cameras and X-ray

2 sliding windows in the partition wall to pass liquids into the operator's cabin

Handles at the entrances (left and right), fixed entrance step at the rear of vehicle

GFK-roof frame for integration of walk-through metal detector.
Construction approved by Mercedes-Benz, Germany, not affecting warranty of base vehicle.

Underbody and cavity protection with DINOL

Electric Equipment

12 V DC / 230 V AC system with additional battery

230 V AC / 50 Hz installation for

- charging either by external power supply ("shore power") or by generator
- operation of included sensor equipment
- operation of additional equipment provided by customer

For 110 V AC / 60 Hz variant → see options

Diesel Generator (e.g. Fischer Panda 5000i)

Uninterrupted power supply UPS

Air conditioning unit mounted on roof,
additional to van's standard AC,
cooling both operator compartment and electronics compartment

Intercom between operator and security personnel

Exterior Lighting above sliding door and above x-ray scanner compartment, left & right

Interior LED lighting for

- walk-through scanner compartment
- operator's compartment
- rear compartment and
- baggage scanner compartment

Sensor Equipment

1x "Walk Through" Metal Detector

Model CEIA 02PN20

requires 'bulge' on roof → modification certified by Mercedes Benz
professional fixation on reinforced floor

1x Liquid explosives detector

Model CEIA EMA

2x Handheld metal detector

Model CEIA PD240

1x X-Ray baggage scanner Spectrum 5333

tunnel size approx. 530 x 335 mm
professional reinforced fixation

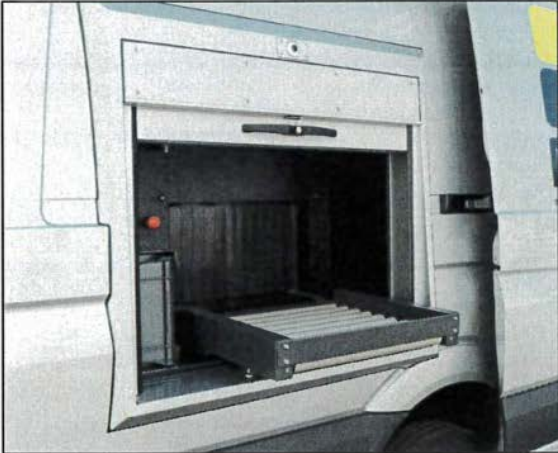
CCTV system

- DVR and monitor

- 9 cameras: 4x periphery of van, 2x walk through scanner, 2x baggage scanner, 1x operator

- Recording of all cameras consolidated on CCTV system and displayed on operator's monitor

For additional sensors → see options



Vehicle Options

Choice of Base Vehicle

All screening vans built so far were based on Mercedes Sprinter, but this concept can be implemented on a wide range of vans.

Other suitable brands/models would be VW Crafter, Iveco Daily, Ford Transit, etc.

These vans are usually not in stock, but built to the exact specifications of the customer, leading to delivery times of 6+ months before we can even start the conversion.

Vans homologated to Euro-3 (export version) instead of Euro-6 can better cope with varying fuel quality found in many countries outside of Europe.

Electrical System

The screening vans built so far have a 230 VAC / 50 Hz electric system.

Alternatively, we can offer 110 VAC / 60 Hz.

New vans would be designed for 110VAC/50Hz (specify the local socket type used for power outlets).

Existing vans could be equipped with additional power transformers.

Tactical Equipment

Integration available on request, according to customer specifications:

- voice radio communication (e.g. VHF, TETRA)
- satellite communication (e.g. Inmarsat, Thuraya)
- GPS onboard unit for fleet management (blue force tracking)
- flashlights and sirens

Training

Prior to shipping of a new Screening Van a delegation from the customer usually visits Germany for the factory acceptance test (FAT). This FAT includes a basic familiarization with the particularities of the van and its sensor equipment.

This is sufficient if the staff that will operate the van is already familiar with the sensors, e.g. from stationary check points at airports, public buildings, etc.

Further training can be offered on request, either in Germany or at the customer's facilities.

Equipment Options

The security equipment routinely installed in the van already makes it an effective screening site. Additional sensors can further expand its capabilities and capacities.

Desktop Trace Detector

Desktop trace detector for trace detection of explosives and drugs.

- Detector device
- Sample collector
- Test marker
- Sampling wand
- Power supply

Handheld Trace Detector

Handheld trace detector for trace detection of explosives and drugs.

- Detector device
- Sample collector
- Test marker
- Sampling wand
- Power supply

e-Passport Reader

Hardware and software package:

- Passport reader device
- Passport reader software

The detailed specification (brand/model) for the sensors above is often determined by national regulations.

Face Recognition

- State-of-the-art face recognition engine running on high performance computing hardware
- Software with user-friendly GUI, offering black-list and white-list functionality
- Works either with included CCTV cameras or with additional cameras.

IMSI-Catcher

- Kingfisher 3 IMSI catcher for 2G / 3G / 4G band
- Conveniently correlate the person being screened to the mobile devices (e.g. smart phone) he carries with him.