



## MC-To-Go

Transportable Monitoring Center

## Overview

The Monitoring Center **MC - To - Go** is one of the most extensive, multi-network, scalable, reliable Interception and Monitoring system available on the market today. For more information please ask for the MC Brochure or Application Notes on specific MC solutions.

'MC-To-Go' adds to the completeness of the solutions by making the Monitoring Center transportable. MC-To-Go uses custom built, robust aluminium modules in which the MC components are secured. A small but powerful MC IP system can be transported using just a few modules.

MC-To-Go offers many possibilities to Security Agencies. It can be used to deploy the MC in any location reachable by transport at very short notice. This flexible deployment can be required for many reasons:

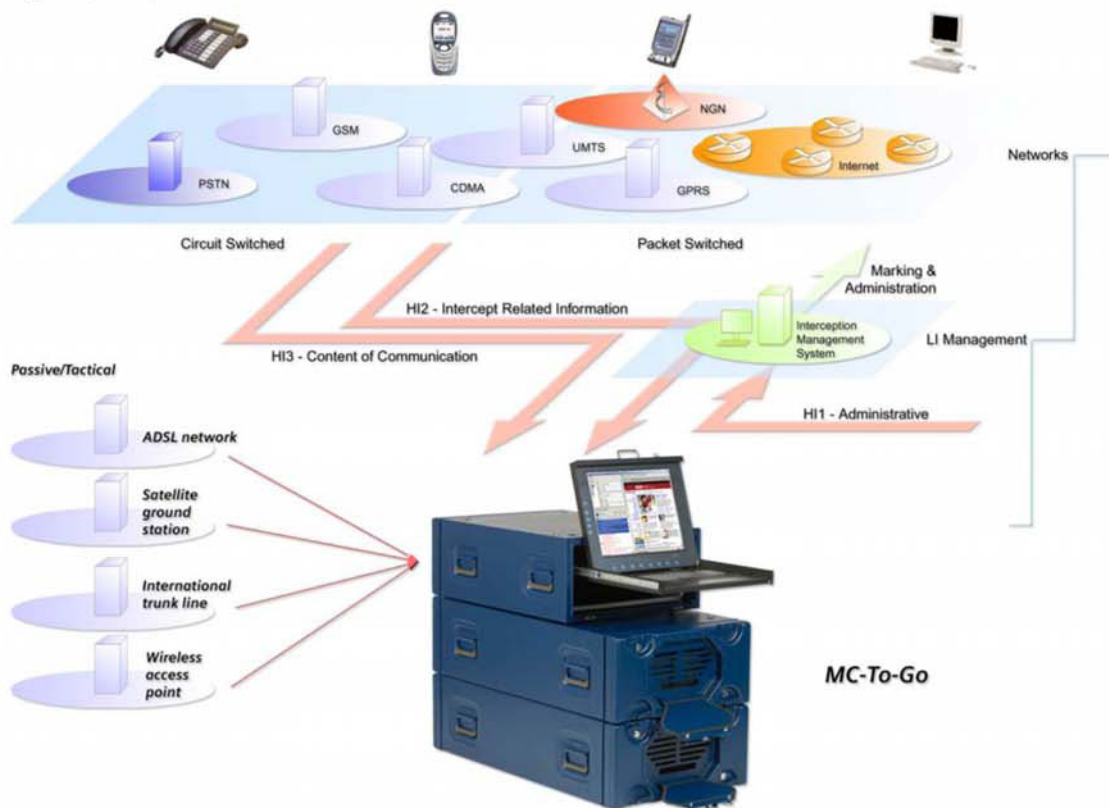
- Covert tactical situations
- Emergency deployments
- Hot-Spot temporary deployment
- Uncertain building availability
- Regional lack of bandwidth
- Agency co-operation

MC-To-Go is a custom designed and built solution for the Monitoring Center from Siemens. It is robust, water, heat and shock resistant, lockable, stackable, portable and can be ordered in a range of colours.

## Construction

MC-To-Go is comprised of one or more modules. Each module is constructed from a welded aluminium frame and panels. There is a front and rear lockable door that is vented. The vents themselves have a door also that can be opened during operation if additional ventilation is required.

Each module offers 4 height unit (HUs) 19" rack slots to house servers and other components. The modules come in two different depths with the shorter one (610 mm) usually used to house a 8 way KVM switch and a retractable combined 17" LCD, keyboard, and mouse unit. Its shorter depth means that the retractable unit does not come out too far over the edge of underlying units. The longer unit is 800 mm to enclose deeper server units and their cabling.



### Transportable

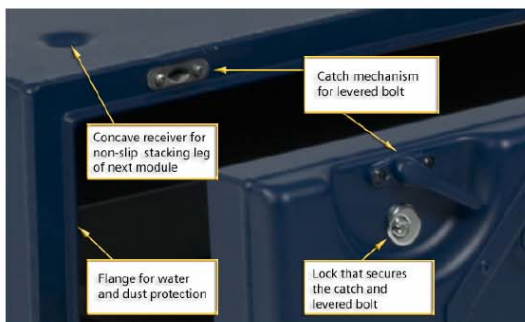
There are 4 strong handles, two on either side of the module. A fully populated module will weigh, at maximum, 65 kg. Two people can easily lift and carry such a module, but if the distance is more than a short walk, the four handles allow more people to share the load.



A small MC system can be contained in 3 modules which will easily fit in the back of a standard station wagon or Sports Utility Vehicles.



Both ends of a module can be removed and re-fastened using a quick-release catch and lever action bolt mechanism that ensures it will not open due to gyration or other shocks. There are four catch and levered bolt mechanisms on each door that secure it to the module.



Two of these mechanisms are secured in position with a lock. There are two locks for each door, one on the top left and one on the bottom right making four locks per module.

Each module door itself contains a smaller air vent and exterior cabling access door. This access door is normally secured closed during transport and opened during operation as an air vent or cabling access. It is fastened using two ring-turned mechanisms and it can be locked separately using a top-centered lock mechanism.



### Pull-out Workstation

One of the MC modules is designed to contain a pull-out (and retractable) ruggedised LCD, keyboard and touch-pad mouse unit. When this is installed with a KVM switch, it gives access to all the components of the MC at the touch of a button.



The pull-out workstation folds down into a sleek 1 HU retractable unit that can be secured using the lockable door. All the cabling to the workstation is protected from wear and tear with a folding conduit mechanism. The KVM switch, 17" LCD screen, keyboard and touch-pad mouse are water and dust resistant.

### Cabling

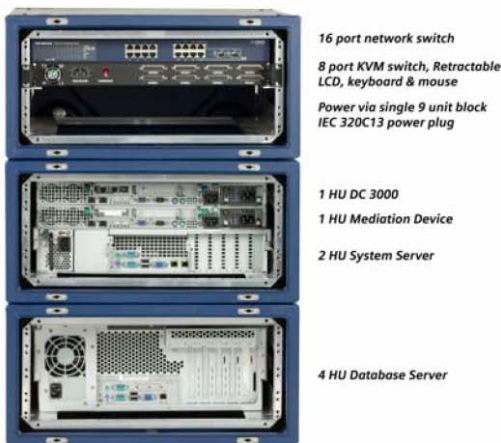
There is designedly, no internal inter-module cabling access so that each module can be independently secured and transported. Inter-module cabling is achieved using the air-vent and cabling sub-doors in the front and rear module doors.

Cabling between modules or with external networks and power sources is routed via the cabling slot of the sub-door.



### Building Systems

The MC-To-Go Modules are designed to be stackable. Each module has reciprocal legs and concave hollows so that modules will not slip off each other when stacked. The modules can be stacked 4-5 modules high – any higher would be impractical for access and operation and unsafe to be lifted by hand. Module stacks can be built side-by-side to extend the system further.



Sample 3 tier MC-To-Go - rear side view

### MC Configurations

There is no real limit to the Monitoring Center configurations for MC-To-Go. Some sample configurations are:

- Active and Passive LI IP
- Active and Passive LI CS
- Passive ADSL intercept
- Tactical Analogue line intercept
- Passive Satellite ground station



Sample 3 tier MC-To-Go - Front Side View

### MC-To-Go

MC-To-Go – the transportable Monitoring Center, gives the MC wings and releases it to work in the field or wherever the customer chooses. This ability to bring the MC to the target rather than networking the target to a fixed MC location has many advantages.

The MC-To-Go modules are designed to military standards for transport to, and deployment in the field. This gives the assurance that no matter what the environmental conditions, the application or the location, the MC can be transported there and will operate on arrival.



Feature	Highlights
Outer dimensions	259 mm x 534 mm x 811 mm – Workstation module 259 mm x 534 mm x 1001 mm – Server module
Inner dimensions	4 HU x 19" rack x 610 mm – Workstation module 4 HU x 19" rack x 800 mm – Server module
Height Units	4 Height Units
Weight	<p>Sample configurations</p> <ul style="list-style-type: none"> <li>Workstation module with KVM, Screen, Keyboard, LAN switch, Power Supply – 38 kg</li> <li>Server module with assorted MC servers – 65 kg – (maximum populated weight)</li> <li>Server module with Storage System - 55kg</li> <li>Empty Server module – 19 kg</li> <li>Server module with end plates removed – 15 kg</li> <li>2 end plates at 2 kg each – 4 kg</li> </ul>
Ingress Protection	Protection class IP 65 in accordance with DIN 40 050 and ICE 34-5/529 through seam welded housing and lid with sealed gasket.
Stacking	Base with stacking bars, top sheet with stacking recesses. All modules are stackable with one another (except for the Workstation module (depth 610) which should be topmost).
Frame	Inside frame made of aluminium extrusions suspended by shock mounts Sides with countersunk spring loaded handles. All sides and lids with reinforcement ribs (except depth 610 module).
Anti-vibration	8 rubber mounts with slide rails to support the anti-vibration frame. Completely removable anti-vibration frame.
Quick-release	Lids with quick-release fasteners.
Rack system	Standard 19" rack. Installation into Dornier-Shelter-Racking possible.
Colours	Any RAL colour – The RAL (Reichsausschuss für Lieferbedingungen) colour space contains 1900 colours

Field Testing	Extract from the results of testing to MIL-STD-810 D/ VG 95446-2
<p>Tested to MIL-STD-810 D</p>	<p><b>5.3 Strength of carrying handles</b> The test item shall be suspended in the normal position and be loaded so, that 375 N will act on each handle. After that, the test item shall be suspended on each handle and be loaded with 750 N. Test duration 5 min.</p> <p><b>5.4 Water spray and dust test</b> According to DIN VDE 0470-1 (VDE 0470 part 1). Degree of protection IP 65.</p> <p><b>5.5.2 High temperature test</b> Test 501.2 according to VG MIL-STD-810 D-3, method 1.</p> <p><b>5.6.2 Low temperature test</b> Test 502.2 according to VG MIL-STD-810 D-4, method IC 2.</p> <p><b>5.7.2 Temperature change test</b> Test 503.2 according to VG MIL-STD-810 D-5, method I to III by 3 × 4 h at 71 °C and -50 °C.</p> <p><b>5.8.2 Damp heat test</b> Test 507.2 according to VG MIL-STD-810 D-8, method III.</p> <p><b>5.9.2 Vibration test</b> 1. Test 514.3 according to VG-MIL-STD-810 D-15 figures 514.3-7, 514.3-8 and 514.3-9, depending on the vibration axis, each 10 min per axis.  2. Determination of resonance during the random-vibration under paragraph 1.  3. Random vibration according to figure 514.3-36 in the 3 main axes, each 1 hour per axis.  The paragraphs 1 to 3 are carried out in 1 axis each complete.</p> <p><b>5.10 Deterioration in pressure chamber under oxygen</b> According to DIN EN 60 335-1 (VDE 0700 part 1): 1995-10, 22.23.</p> <p><b>Drop test</b> Free fall from a height of 1.2 m on all possible impact surfaces but ensuring by way of a minimum impact at the weakest point.</p> <p><b>5.11 Vibration test</b> Test 516.3 according to VG MIL-STD-810 D-17. The vibration test with recording of the damping is to be carried out in the 6 main directions with each 3 half-sine shocks at an acceleration of 40 g and pulse time t = 7 ms.</p>

Abbreviation	Description
ADSL	Asymmetrical Digital Subscriber Line
CDMA	Mobile Network – Code Division Multiple Access
CS	Circuit Switched
DC	Data Collector
ETSI	European Telecommunications Standards Institute
g	Gravitational Constant
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
Hlx	Handover Interface
HU	Height Unit
IP	Internet Protocol
IP xx	Ingress Protection rating xx
IPIS	Internet Protocol Interception System
kg	Kilogram

Abbreviation	Description
KVM	Keyboard, Video, Mouse
LCD	Liquid Crystal Display
LI	Lawful Interception
m	metre
MC	Monitoring Center
mm	millimetre
ms	millisecond
MS	Management Station
NGN	Next Generation Network
PSTN	Public Switched Telecommunications Network
RAL	Reichsausschuss für Lieferbedingungen – a colour space system
TFT	Thin Film Transistor – a type of LCD screen
UMTS	Universal Mobile Telecommunications System



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