

TriOpSys

Integrated Command & Control Rooms (iCCR)

MAS / Mastermind



TriOpSys B.V.
Computerweg 5
3542 DP Utrecht

Postbus 8307
3503 RH Utrecht

T: 0346 58 1730
F: 0346 58 1740
info@triopsys.nl

www.triopsys.nl

Handelsregister
32070271

ISO 9001:2000



1. General expertise of TriOpSys on integrated Command & Control Rooms

1.1. TriOpSys has many years of experience in the field of integrated Command & Control Room (iCCR's), both for Security Companies and for the Public Safety departments. These kinds of systems fit very well within the TriOpSys' mission: Consultancy, Development and Maintenance of Mission Critical IT systems (or Operational Systems).

1.2. TriOpSys has proven experience with:

- New development of iCCR-systems, like the systems built for the ANWB (Dutch Automobile Association), Securitas (Orion, Cosmos) or components of such systems (Alarms Dispatch System – ADS);
- Application maintenance of iCCR-systems built by other parties (e.g. Randon Security)
- Implementing standard software-packages, like Van Ovost and MAS (Mastermind, supplied by GE) including specification of interfaces and verification / acceptance testing (e.g. Niscayah NL and UK).

1.3. In addition to development, maintenance and implementation of software systems, TriOpSys also has broad experience with audits on control rooms systems, both for reasons of technical problems (architecture, performance, etc.) and functional or political issues. We do not only address the problems discovered, but – as skilled software engineers - we also address 'the way out'. This is the strength of TriOpSys: combining in-depth analyses of existing situations with realistic and feasible solutions for future improvements.

2. TriOpSys' expertise regarding MAS

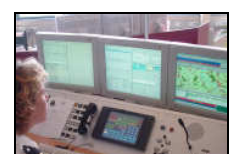
Our customers have stated that our assistance in implementing MAS has been essential to them in achieving their objectives in time and that the project would have failed without our knowledge and expertise. References are available on request.

TriOpSys can assist in the following areas:

2.1. Project management:

2.1.1. Development of the project plan with realistic time-scales and all necessary tasks for these kind of projects, based on our experience from earlier projects with MAS;

2.1.2. Management/liaison with subcontractors and suppliers of hardware- and software-components, including GE as supplier of MAS and management of all persons involved within the organization of the customer. We feel obliged to mention that management of GE is not an easy task; because of



the difference in culture (attitude) and time-zone, and the long distance between Europe and the USA. This has been and will be an important aspect of these projects and might require having one of our specialists on site at GE, Irvine, California;

2.1.3.Active monitoring of the project and sub-projects, including sufficient attention for risk-evaluation and management;

2.1.4.Organization of testing (test plans, test scripts), migration of data from the old control-room-system to MAS, parallel usage of the old system and MAS for testing of live data and procedures, etc.

2.2. Functional analyses:

2.2.1.Functional and technical requirements (and constraints) for the new control-room-system should be analyzed and documented, before introducing MAS.

2.2.2.With this list the organization can check that all necessary functions will be available in the new system, based on MAS, and decide *in advance* what the organizational impact will be, when functions are not present, or implemented in a different way in MAS (MAS contains many functions, but quite often we find many bespoke functions in existing control-rooms, fully dedicated to the specific organization);

2.2.3.Only when this functional and technical 'wish-list' is complete, the management has a complete picture of the impact and results of the migration. Also, the checklist can be used to decide that the migration is ready and successful;

2.2.4.The functional and technical requirements will be documented by TriOpSys and are available for use by all parties involved as a binding reference.

2.3. Development of infrastructure:

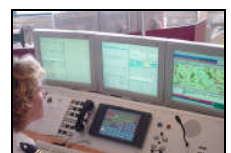
2.3.1.Design of the new IT-architecture, based on the resources needed by MAS, existing and/or new line-handlers, including servers, clients, voice-response-units, interfaces with existing or new PABXes, network-components, etc.

2.3.2.Setting up a separate hardware configuration for pre-staging, testing and training. Equipment can later be used as workstations in the operational set up. The availability of a separate test environment has proven a valuable asset in evaluating technical and functional issues and their candidate solutions. Also, using the test environment allows a professional installation of the operational system while at the same time progress is being made with the software configuration.

2.3.3.Specification, configuration and testing of technical interfaces, e.g. alarm panels, messaging formats, timing characteristics. Feedback to and interaction with GE and supervision of the implementation.

2.3.4.This also contains 'sizing' of the hardware: which hardware-specifications must be used for MAS, taking into account the number of connections and messages of the control-room;

2.3.5.Preparation of the procurement of these components and management of the suppliers;



2.3.6. Installing the hardware and network components, perform the system configuration, including secure access from GE USA for remote staging and interconnecting the various subsystems (voice response hardware, PABX, modems, video systems, etc)

2.4. Migration of data:

2.4.1. Analyses of the 'old' data-structure and comparing this structure with the data-structure as needed by MAS;

2.4.2. Conversion of data from the old structure/database/files to the MAS-database-structure, wherever possible using tools developed for earlier projects;

2.4.3. Thorough checking of the data, to ensure that all data-elements are transferred and all data is consistent;

2.5. Translation of language specifics

2.5.1. The English terms and words, as used by MAS, are translated by TriOpSys to the local language of the users or specific jargon of the organization;

2.5.2. As TriOpSys has done this before, and MAS contains many words throughout the application, our expertise will save the customer many hours;

2.5.3. Where possible and necessary we involve users, or the representative of the users, for the way terms and words must be presented on the MAS workstations.

2.6. Training of staff:

2.6.1. Arranging all training-facilities (equipment, installation of software, co-ordination with GE-staff);

2.6.2. The actual training of staff is done by GE, on the customer's site or another location as desired.

2.7. Specification and testing of the Voice Response System

2.7.1. Analysis and specification of the 'old' system and/or the specification of the new wishes;

2.7.2. Monitoring and testing of the implementation by GE Security.

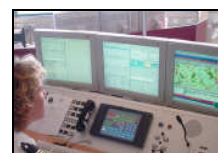
2.8. Testing of the new monitoring system:

2.8.1. To prevent loss of messages or actions (with all consequences thereof), in-depth testing of control-rooms systems is necessary;

2.8.2. TriOpSys recommends a separate test- and training-system, which also can be used as a platform for preparation of the migration;

2.8.3. Realization of the Software Test Plan (STP) and Software Test Descriptions (STDs);

2.8.4. Realization of 'mirrored operation' (of new and old system) until there is sufficient confidence in the operation of the new system, based on MAS. Special scripts are used to support semi-automatic comparison of the



outputs of the old and the new system. Output of these scripts is stored for later verification. Examples are available.

2.9. Option: development of missing software:

2.9.1. As MAS is a very complete set of software-modules for integrated control room systems, usually all functionality is covered by the existing modules; Furthermore, GE does not easily allow other parties to integrate software with the MAS software-modules;

2.9.2. However, when additional software is needed to address missing functions in MAS or to realize interfaces to other systems, TriOpSys has the experience and is able to make a proposal for development of these software-components.

3. How to proceed?

- Usually we visit the customer site to address all points mentioned above.
- From our point of view we need from a customer (a) the decision to migrate to MAS, (b) the need for assistance in implementing MAS and management of GE and (c) the persons responsible for the monitoring software, including the decision-makers, in the first meeting.
- After this first meeting, it is usually possible to make a proposal, dedicated to the specific situation.

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