

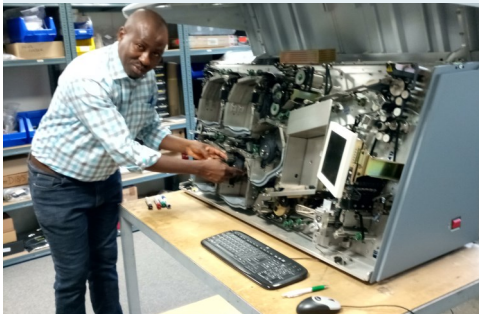


## MKN, Kora Neza

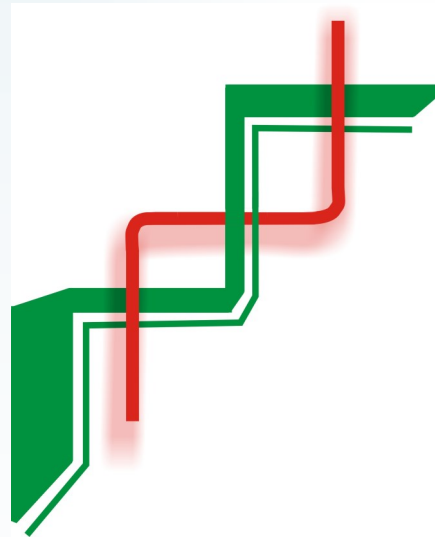
### System Engineering Company

Through system engineering which is an interdisciplinary scientific approach, MKN brings you its cornerstone in advice, studies, works, services and maintenance relating to complex projects which may include one or more disciplines below:

- ◆ Safety and security engineering;
- ◆ Electrical engineering and electrical safety;
- ◆ Electronic engineering;
- ◆ Mechanical engineering;
- ◆ Civil engineering;
- ◆ Maintenance engineering;
- ◆ Communication network engineering;
- ◆ Cognitive engineering;
- ◆ Educational engineering;
- ◆ Engineering and environmental technology.



## MKN, Kora Neza



### MKN, Kora Neza (MKN)

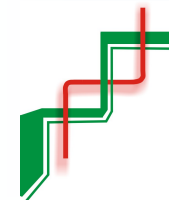
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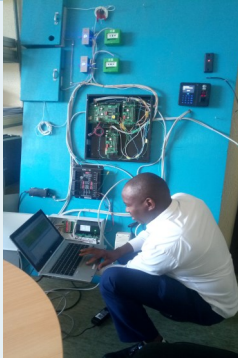
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## SYSTEMS ENGINEERING / Consulting, Studies, Works, Services and Maintenance

### MKN, Kora Neza



« Together, let's create »



## Our methods and services

MKN uses the cooperative and interdisciplinary methods of System Engineering to manage your complex projects or to get to the heart of your technical objects.

MKN can intervene at any stage of the life cycle of your technical objects by offering the services of:

- ◆ Design;
- ◆ Development ;
- ◆ Evolve ;
- ◆ Verification and
- ◆ Maintenance et **reverse engineering**.

In the event of complex multidisciplinary projects, MKN can provide you with solutions in the following stages:

- ⇒ Definition of requirements;
- ⇒ Design. From there, MKN can carry out the study, produce the Specifications, develop the Bidding Documents (National or International) and evaluate the bids on behalf of clients;
- ⇒ Supervision of works and validation of Project receipts;
- ⇒ Support for the customer in the operation of the technical object by defining the optimal conditions of operation and use and by defining from the start its cost of ownership (all the direct and indirect costs linked to the ownership of a good including maintenance costs and charges relating to the development of the technical object.).

## Domaines d'intervention de MKN

### 1. Safety and Security Engineering

In the field of safety and security engineering, MKN offers you a comprehensive safety and security program whose essential functions are:

- ◆ Prevention (management of security risks and associated risks including the business continuity plan);
- ◆ Deterrence;
- ◆ Threat detection;
- ◆ Delay threats or malicious people;
- ◆ Intervention by internal security agents or Public Intervention Teams.

hus, to be able to fulfill these functions, such a program must include 3 fundamental elements that MKN can help the customer to set up:

- ◇ The security system (**technical means available to the customer: integrated security system, access control, video surveillance, anti-intrusion alarms, fire safety, control points with electronic or manual inspection, etc.**);
- ◇ The personnel who must on the one hand operate, manage and administer the security system and, on the other hand, who must take part in the interventions in the event of an alarm or the occurrence of an incident;
- ◇ The documents allowing the effective management of the security system:
  - ⇒ Security Policy,
  - ⇒ Safety Procedures and Instructions,
  - ⇒ Internal Emergency Plan.

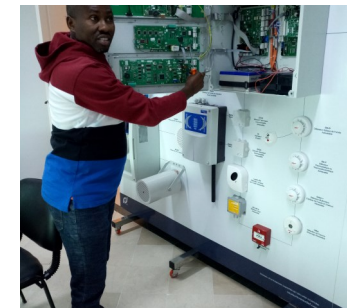
### 2. Electrical Engineering and Electrical Safety

Through Electrical Engineering and Electrical Safety, MKN offers you design or verification services for electrical installations based on international standards with respect to:

- ◆ Electrical protection depending on the nature of the electrical energy consumer (industrial building, administrative building, market, restaurant, bank, school, swimming pool, etc.) and the frequency of stress on electrical installations;
- ◆ Protection against lightning and its side effects for the different types of technical installations (radio and television broadcasting, telephony, industry, household, etc.);
- ◆ Normative techniques for earthing structures and various electrical installations.

**MKN can, through Electrical Engineering:**

- ⇒ **Upgrade or put in place effective protective devices to mitigate the risk of electrical fires or impacts in the event of fire or flood;**
- ⇒ **Audit electrical protection devices to ensure that they are performing their essential functions.**



*Training in fire safety systems at DEF, Tunis, October 2018.*



### 3. Mechanical Engineering

Mechanics is a field of physics interested in the study of forces and motion for all states of matter (solids, liquids or gases).

Mechanical engineering is involved in all sectors of the economy. Although the most important sector is manufacturing, there are many other possibilities open to it. So, MKN offers you its services in engineering consulting, building mechanics, education, environment, project management and more.

With mechanical engineering and by creating very elaborate range of manufacturing or intervention, MKN operates in many areas of activity, including:

- ◆ The design and construction of metal structures: frames, trusses, pylons, guyed masts, etc.);
- ◆ Maintenance of mechanical systems.

### 4. Civil Engineering

In the field of Civil Engineering, MKN offers you:

- ◆ optional quotation services allowing the customer to make the choice within their budget;
- ◆ studies and sizing;
- ◆ drawing up plans using drawing software (computer-assisted drawing); the execution of structural work;
- ◆ the management of projects integrating special building techniques (heating, ventilation, air conditioning, electricity, sanitation, lifting equipment, etc.);
- ◆ Building Management System (BMS) or home automation ;
- ◆ The management and implementation of Data Centre projects (including security);
- ◆ Conduct and implementation of building fire safety projects;
- ◆ Supervision of civil engineering works;
- ◆ Maintenance of buildings and other works.

### 5. Ingénierie de maintenance

In order to respond to the various issues, MKN offers solutions to:

- ◆ improve the reliability and safety of installations,
- ◆ to optimize the overall cost of ownership of equipment,
- ◆ to set up maintenance in operational condition.

Thus, MKN offers study plans in order to show the ability of equipment to be maintained or to be put into service (reliability, maintainability, availability) and to demonstrate its safety.

As soon as the Specifications are determined in collaboration with the customer to acquire equipment, MKN develops a tailor-made support system with:

- ◆ Maintenance in Operational Condition strategy: maintenance policy and plan / assessment of the overall cost of ownership / sustainability of resources,
- ◆ implementation of support elements: human resources / hardware / software / documentaries / logistics,
- ◆ maintaining the availability of the product, depending on its characteristics (reliability, maintainability) and its conditions of use.

The Maintenance in Operational Condition is the set of measures taken to guarantee that the switch to a degraded environment does not lead to an unacceptable alteration of the usual working conditions.

MKN is based on the approach of

**reverse engineering**

in systems maintenance. This method consists of helping our customers understand the operation of an existing system that has no plan or method of manufacture so that they are able to use it correctly, modify it, or make sure to its proper functioning or to maintain it.



*Maison construite avec les briques modernes, Bujumbura 2018.*



### 6. Communication Networks Engineering

Through its expertise in communication network engineering, the MKN company offers project management and implementation services in the following areas:

- ◆ Radio (FM broadcasting, PMR radio,...);
- ◆ Television;
- ◆ IT (hardware and software);
- ◆ Computer network and internet;
- ◆ Data Centres;
- ◆ GSM networks;
- ◆ Fixed telephone networks;
- ◆ Wifi and network access;
- ◆ Geolocation.

### 7. Cognitive Engineering

MKN offers its customers the benefit of user-centric systems design, where the realization of the final product must translate into a match with the habits and practices of users and with their logic of thought.

In fact, an intelligent system is a powerful system which interacts in an adapted way with the user:

- ◆ The user must easily understand the logic of the tool and be able to interact easily with it;
- ◆ The system must be a help for the user: its complexity and its intelligence must be transparent to be accepted by the users. The interface must be simple and ergonomic.

It is by knowing how the human brain learns or re-learns knowledge, how it interacts with technological objects or with other brains, that Cognitive Engineering offers some of the major concepts and results in the study of the brain and of its functions (perception, action, decision, consciousness, memory, language, social cognition, ...). Cognitive Engineering also shows how this fundamental knowledge can help solve complex engineering problems involving the human operator.

### 8. Educational Engineering

MKN's expertise will allow it to offer its clients the study services of Educational Engineering projects from different angles: technical, economic, financial and social.

The main institutions targeted are:

- ⇒ The Ministries having in their attributions, basic education, secondary and higher education;
- ⇒ Training centres;

- ⇒ Public and private schools;
- ⇒ Public and private academic institutions;
- ⇒ Popularization and awareness programs;
- ⇒ Hospitals and health centres.

Through its skills in Educational Engineering, MKN offers its clients the teaching methods and tools adapted to a learner audience aimed at acquiring knowledge or skills and responding to educational objectives clearly defined by the clients themselves.

Educational engineering also responds to issues related to optimizing costs and learning paths.

The implementation of a pedagogical approach is strongly recommended in any project requiring the intervention of a teacher or trainer and aimed at acquiring specific knowledge.

In addition, educational engineering makes it possible to manage various devices specific to an act of learning: use of technologies, informal training or support.



*A two-year-old boy is introduced to maintenance.*





### 9. Engineering and Environmental Technology

MKN is also at your fingertips so that you can take advantage of Environmental Engineering.

Environmental engineering refers to a relatively innovative science, which is part of engineering, and which integrates ecological, social, economic and technological issues; therefore, it is directly related to the concept of sustainable development.

The objective of environmental engineering is precisely to propose solutions that will contribute to the achievement of sustainable development and the preservation of natural resources in order to improve the quality of life.

However, reconciling economic growth and sustainable development is often complex, and can even seem contradictory.

It is therefore up to the environmental engineer to develop solutions that will contribute to the country's growth within the framework of sustainable development. His professional activity will consist of diagnosing, designing, developing, researching, administering and undertaking possible solutions in order to meet the needs that arise in society, in his field of work or sphere of activity.

In this context, if you ask the company MKN, the latter will then examine from a technical point of view the various environmental problems arising from industrial activities, and will propose the adoption of solutions and good practices always taking into account economic and social factors.

### 10. Electronic Engineering

Electronic Engineering is the branch of engineering which deals with new technologies and includes engineering of electronic devices as well as programming engineering.

MKN mainly offers preventive and curative maintenance services for electronic devices or modules.

## CONCLUSION

The construction of complex infrastructures requires the implementation of a large number of systems, subsystems, equipment with many interfaces and the involvement of all trades (civil engineering, IT, control / command, electricity, mechanics ...). These large-scale projects are subject to strong regulatory requirements and require the use of System Engineering in their planning, conduct and management.

Since its inception, System Engineering has largely proven its efficiency. The use of System Engineering makes it possible to ensure the compliance of the system with the needs and constraints of the client, to better control the technical risks of the project, to gain in productivity and quality by sharing reliable and accessible information. It makes it possible to secure the construction and testing phases by avoiding late modifications and thus to control progress and costs.



*A boy who wants to understand how it works, Bujumbura 2012.*