

# CASE STUDY

 **FlexNet**™

with

 **OPEN GRAPHIC NAVIGATOR**

Berenice International Airport

Egypt

مطار برنيس الدولي  
BERENICE INTERNATIONAL AIRPORT

وصول  
ARRIVAL

Arrival Hall  
مساحة الوصول  
Parking  
مواقف انتظار السيارات

 **Mircom**®



## AT A GLANCE

The Berenice International Airport (BIA) in Egypt is a newly constructed airport hub designed to stimulate tourism and attract visitors to Egypt's Red Sea coast region. The project plays a pivotal role in Egypt's 2030 vision to create a stronger, more prosperous and more vibrant nation.

The BIA spans a massive compound area and is comprised of a total of thirty-seven (37) different buildings. Mircom partnered with the Egyptian Airports Company (EAC) and Telecommunication Engineering Consultant Office (TECO Egypt) to successfully deliver the requirements of a UL listed intelligent networkable fire alarm system and a UL Listed centralized graphical management software workstation. The Mircom solution was completed well within the requested 16 month timeline without issue or delay.

## PROJECT BACKGROUND & SCOPE

The BIA consists of a corridor totaling 3,650 meters in length and 60 meters in width for a total site area of 219,000 square meters. The airport apron can accommodate up to 8 aircrafts simultaneously and the terminal can process up to 600 passengers per hour.

The project includes a 58-meter-high control tower, and 37 technical, administrative, and service buildings including:

- Air traffic building
- Terminal building
- Airside guard house (2)
- Guard house buildings (2)
- Project gate building
- Airport maintenance building
- Mosque
- Water tank building
- Water tank chlorination
- Water Tank
- Chiller building
- West water treatment buildings (2)
- Electrical substation buildings (6)
- Electrical station building
- Housing facility building
- Soldier mess
- Weapons storehouse building
- Warehouse office facility
- Fire fighting building
- Meteorology building
- Garage building
- Airport waste building
- Security building
- Permission building
- Gate security buildings (2)
- Lighting substation building (2)
- Lighting building



# CHALLENGE

The EAC requested a UL Listed networked addressable fire alarm system with centralized graphical software for the project. The challenge in implementing the system was working with the massive compound area and the vast distance between the BIA's 37 buildings, as well as the location of the airport relative to the distance from TECO Egypt's national headquarters (over 1,000 km).

An additional challenge was the request by EAC to have a master fire alarm control panel (MFACP) programmed to monitor and control all buildings in the network, and to have all fire alarm control panels (FACP) displaying and controlling only local events for each building.

Despite the obstacles of distance and various advanced programming requests, Mircom was expertly able to fulfill all client requirements within the precise timeline in an efficient and effective manner.

# THE MIRCOCM SOLUTION

To address the challenges presented by the BIA, EAC chose Mircom's FleX-Net for its robustness and ease of programming. The solution encompassed nine (9) FleX-Net control panels connected by fourteen (14) kilometers of single mode optical fiber network.

FleX-Net panels offer modular configuration to meet a wide variety of applications. Designed for peer-to-peer network communications, the FleX-Net Series allows for up to 63 nodes, while providing reliability, flexibility, and expandability. It also has capability to allow for multiple customer configurations in real time for end users. FleX-Net is designed to be upgradeable in the future with end users having the ability to further customize the system in the event of building upgrades or renovations.

The FleX-Net Fire Alarm system is also configured with integrated smoke control management and BACnet/IP for high-level software integration within a building management system (BMS).

A major advantage of FleX-Net's programming is that it can be executed from any single FACP throughout the BIA, without requirement for programming each panel individually.

During the final stages of the BIA project, EAC requested to designate the FACP in the Terminal Building as the MFACP. This was easily achieved by utilizing FleX-Net's Node Grouping feature to monitor building events within specific locations rather than utilizing its default global events design.

Mircom's Open Graphic Navigator (OpenGN) was also selected by EAC for its UL Listed 3D centralized fire alarm graphic management software. OpenGN provides real-time local or remote monitoring and control of buildings and campuses. As a powerful integration tool, OpenGN allows operators to monitor remote sites from multiple workstations.

# SYSTEM SUMMARY

The BIA installation incorporates nine (9) FleX-Net Series networkable fire alarm control panels with more than 2,500 initiating and notification field devices, seven (7) Intelligent addressable expander power supply units (INX-10A), 350 notification devices, 900 spot type detectors and 1250 modules. It also includes the Mircom Open Graphic Navigator (OpenGN) 3D central graphic station.

The BIA fire alarm system also utilizes special application fire detection devices provide by Mircom including explosion proof heat detectors, explosion proof smoke detectors, hydrogen gas detectors, aspiration smoke detectors and a linear heat detection system.



OpenGN provides 3D troubleshooting for the entire campus, which is the perfect solution for this large campus property where being able to guide emergency personnel to precise locations is crucial.



OpenGN provides 2D troubleshooting for a specific area or layout.



## INSTALLATION AND TEAM

Mircom was very honored to partner with Telecommunication Engineering Consultant Office (TECO Egypt) on the BIA project. TECO Egypt's work focused on the supply, installation, testing and commissioning of the Mircom system. The TECO Egypt team consisted of two (2) commissioning engineers and four (4) technicians. The main contractor on the project was Hassan Allam Technologies.

Mircom's Global Applications Team based in Canada also expertly assisted in the implementation of the system by providing technical and programming assistance during the commissioning phase of the project.



*"We 'Hassan Allam Technologies' hereby would like to thank you very much for the outstanding contribution to the successful opening of Berenice International Airport ... we confirm our full satisfaction of TECO, Mircom's ESD's serious commitment and professional performance."*

- Ahmed Elzayat - Project Manager  
Hassan Allam Technologies

## CONCLUSION

Mircom's FleX-Net and OpenGN solutions at the Berenice International Airport were a resounding success. The EAC is thoroughly satisfied with the deliverables provided by Mircom and TECO Egypt. Despite challenges faced in protecting the massive area, our solution's flexibility and robustness allowed all challenges to be faced head on and surpassed.

The EAC was deeply impressed with the adaptability of Mircom's systems and the technical features of the FleX-Net and the OpenGN 3D graphic software. Mircom and TECO Egypt's output demonstrated our mutual commitments to excellence, and our ability to successfully execute on a wide array of challenges.

The successful completion of the BIA project has resulted in another strong validation of Mircom's solutions, as well as the addition of more satisfied Mircom clients and partners moving forward.



### About Mircom®

Founded in 1991, Mircom is a global designer, manufacturer and distributor of Intelligent Building Solutions. Reaching customers in over 100 countries worldwide, Mircom's portfolio includes: fire detection & alarm, communications & security, mass notification, nurse call, and building automation & smart technologies. Mircom's vision is to make buildings worldwide safer, smarter, and more livable.

Our global network of dedicated Sales and Service Offices, known as Mircom Engineered Systems, allows us to be a full solution provider. Through Mircom ES, we're able to provide and fully service our line-up of innovative and advanced solutions which are scalable to satisfy diverse user demands, from small & mid-size buildings to the world's most complex applications.

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MGC-CS-22003  
10-21