



## A Senegal-Based Fertilizer Industry Utilized Matrix Communication Solution To Bridge Sites into One Seamless Network. Case Study

### Application:

Multi-location Solution,  
Hybrid Communication solution,  
VoIP-PRI Gateway, VoIP-FXO-FXS Gateway,  
PBX Server for Unified Communication

### Industry:

Manufacturing

### Location:

Senegal

### Company Overview:

The client operates as one of Sub-Saharan Africa's leading producers of phosphate fertilizer goods. They initiated phosphate rock mining in the early 1960s and commenced phosphoric acid production in the late 1980s. Their expansive industrial complex, situated in Senegal, encompasses multiple sites like Mining, an Acid Plant, a Fertilizer site, and a power plant. The industry primarily exports its phosphoric acid to India, while marketing its fertilizer products within West Africa and internationally.

### Requirements:

The client had a significant need to interconnect numerous sites and unify them under a singular communication platform. Furthermore, they sought a hybrid communication solution capable of accommodating both contemporary and conventional networks. Their requirements can be summarized as follows:

- **Hybrid Communication Solution:** Implement a combination of VoIP and traditional networks to optimize communication effectiveness.
- **Multilocation Solution:** Establish connectivity across multiple sites and integrate them onto a unified platform to facilitate efficient communication.
- **Additional Features:** Specifically requested features such as Call Accounting and Billing to streamline day-to-day administrative tasks and operations across multiple locations. Additionally, the integration of a public address system via the CO line at the power plant was essential to ensure the timely dissemination of important instructions to workers, whether during routine operations or emergency scenarios.

### Solution

Matrix in association with Bintech devised a Hybrid Communication solution that was apt for this industrial giant. The solution had to take into account the distant locations that needed to be connected, in addition to the availability of traditional networks on which the industry wanted to rely. While a window to modernize using VoIP connection was open, analog terminals also had to be employed in the solution.

The Matrix solution includes:

- Two SETU VTEPs, a PRI Gateway, extending an IP Connection to the ANANT, a server-based PBX, at both the MINE and ACID sites. Five ETERNITY GENX platforms at the MINE and two at the ACID site were connected over LAN to the ANANT. Multiple analog phones were connected to these GENX platforms, and each GENX

platform at the ACID site had a GSM trunk extension.

- At the Fertilizer site, the ANANT (Primary) was connected to the WAN. One GENX platform, connected over LAN, provided connections to multiple analog phones on-site. Additionally, a GSM trunk was facilitated with this GENX Platform.
- An ETERNITY PENX was connected to the WAN at the power plant, with a public address system over CO. Additionally, 28 Analog phones were integrated into the network at the power plant.
- At Senchim, SETU VFXTH, a VoIP-FXS gateway was connected with the WAN. It further offered connectivity to multiple analog phones.

## Results

The implemented Hybrid Communication solution successfully unified diverse sites onto a shared communication platform, leveraging both modern and traditional networks. Additionally, it optimized communication with various features. The solution provided:

- **Seamless Multi-site Connectivity:** Utilizing SETU VTEP supporting up to 2100 IP users and ANANT accommodating up to 5000 IP users, seamless connectivity across multiple sites was achieved.
- **Hybrid Communication Solution:** A custom-designed Matrix solution integrated products capable of utilizing modern and traditional networks. VoIP, GSM, and analog networks were efficiently combined to ensure effective communication among multiple sites.
- **Modern Features:** The solution enabled public address functionality over CO through ETERNITY PENX at the power plant, facilitating crucial information dissemination during emergencies. Integration of Call Accounting software, as per the client's requirement, was seamlessly incorporated into Matrix PBXs.

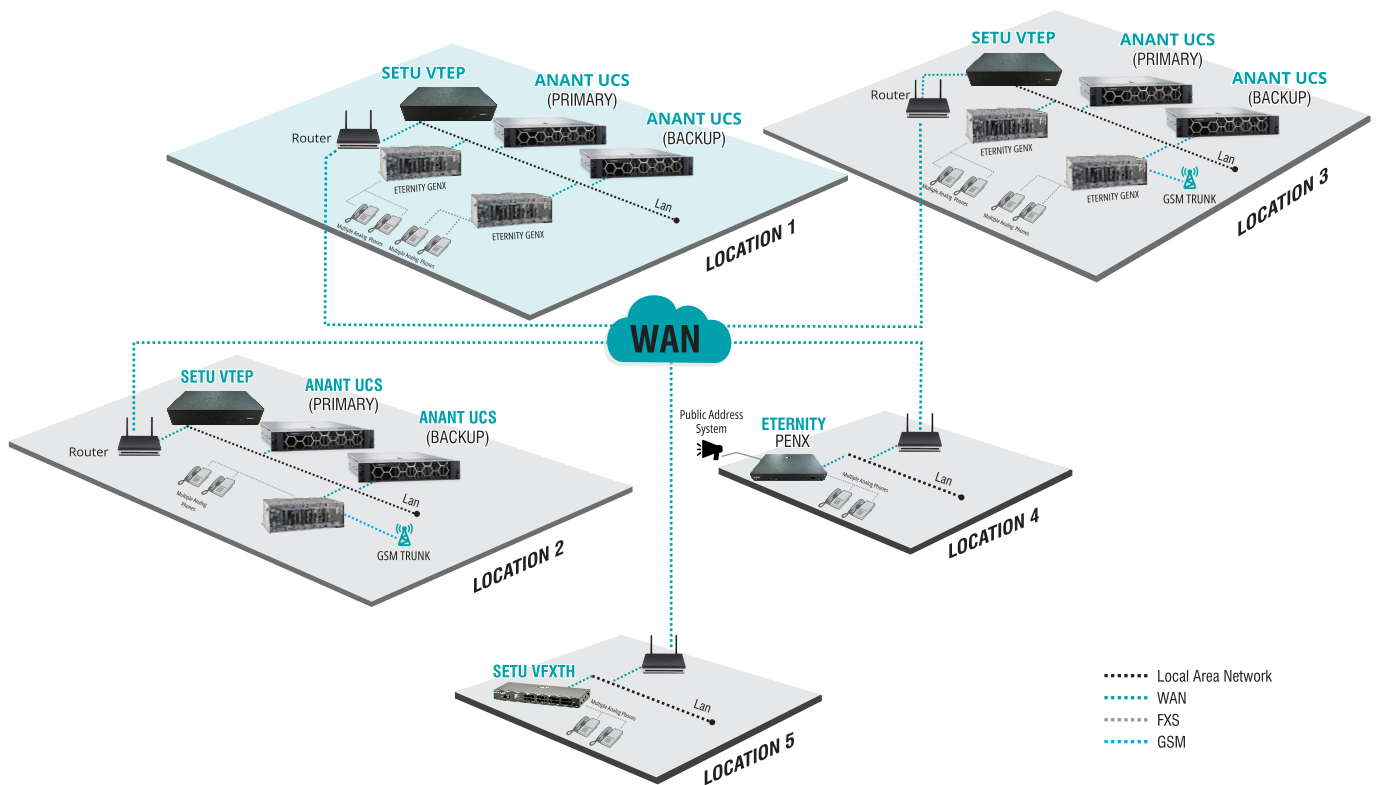
By blending modern and traditional networks, the Matrix solution stands out for its effectiveness, efficiency, uniqueness, and future readiness.

## Products Offered

- **Matrix ANANT UCS:**  
PBX Server for Unified Communication
- **Matrix SETU VTEP 2P:**  
VoIP-PRI Gateway
- **Matrix SETU VFXTH:**  
VoIP-FXO-FXS Gateway
- **Matrix ETERNITY GENX12SAC:**  
Hybrid PBX
- **Matrix ETERNITY PENX:**  
Hybrid PBX



## Solution Diagram



## About Matrix

Established in 1991, Matrix is a leader in Security and Telecom solutions for modern businesses and enterprises. As a technology-driven, and customer-focused organization, the company is committed to keeping pace with the revolutions in the Security and Telecom industries.

With around 40% of its human resources dedicated to the development of new products, Matrix has launched cutting-edge products like Video Surveillance Systems – Video Management Systems, Network Video Recorders and IP Camera, Access Control and Time-Attendance Systems as well as Telecom Solutions such as Unified Communications, IP-PBX, Universal Gateways, VoIP and GSM Gateways and Communication Endpoints. These solutions are feature-rich, reliable, and conform to international standards.

Having global footprints in Asia, Europe, North America, South America, and Africa through an extensive network of more than 4000+ channel partners, Matrix ensures that the products serve the needs of its customers faster and longer.

Matrix has ISO 27001: 2013, 20000-1 2018, 14001- 2015, and 9001: 2015 certifications for quality management standards. Matrix has also been awarded ZED Quality Certification, and DSIR Certification for indigenous R&D and Manufacturing. Matrix has gained the trust and admiration of customers representing the entire spectrum of industries.

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