

# AREU EMERGENCY SERVICES

AREU relies on Stratus to ensure Lombardy's EMS PSAPs are **ALWAYS ON**

AREU (Azienda Regionale Emergenza Urgenza) dates back to April 2008 as the agency in charge of governance and operational management of extra hospital Emergency Medical Services (EMS) for the Lombardy region of Italy. This includes the management of EMS calls for service, as well as the coordination of tissue and organ transportation services.

In order to achieve the unification and coordination of all EMS activities throughout the region, AREU's main objective is to foster constant improvements in the skillsets of its staff, in business processes, organization, technology and knowledge. In 2009 AREU was also responsible for launching 112 European Emergency Number services in Italy by strategically deploying three 1st level PSAPs within the territory.

The Lombardy region stretches 24,000 km<sup>2</sup> (9,300 square miles) and is the most populated region in Italy with 10 million residents. The served population figure rises to 13.5 million if average commuter and tourist statistics are considered as well.

EMS figures reflect their 24/7/365 hour approach:

- Number of calls per year: 1,150,000
- Number of managed PSAP personnel (dispatchers and PSAP employees, professional first responders, volunteers, etc.): 38,000
- Number of managed units: 580
- Average time for unit dispatch (from the first phone ring to the actual unit engagement): 140 seconds

## Quick Facts

### Solution Profile

- Four EMS PSAPs serving an area of 9,300 square miles and approximately 13.5 million people; 2,190 unit dispatches per day, 580 units managed, 50 to 90 dispatchers per shift
- Centralized shared Data Center designed according to the next generation data center paradigm with fault tolerance and disaster recovery assurance
- Best in class CAD system encompassing call taking, dispatching, web access (400 managed remote stations), GIS, radio integration and mobile data computer access for first responders
- Fault-tolerant server platform providing continuous availability to the CAD system

### Products

- Beta 80 emma/iO CAD suite
- Stratus ftServer® 6400 systems
- VMware® vSphere™ virtualization software

### Services

- Beta 80 24/7/365 support services
- Stratus 24/7/365 Total Assurance support services



## The Challenge

The Government of Lombardy appointed AREU to carry out a local EMS reorganization and control room consolidation to reduce the number of PSAPs from twelve to four—Como, Bergamo, Milan and Pavia. Each new PSAP (a.k.a. SOREU - Sala Operativa Regionale dell’Emergenza Urgenza) would have to be designed not as a stand-alone communication center, but with the inherent capability to act as a backup for any of the other three sites.

Leveraging an advanced, flexible and state-of-the-art Computer Aided Dispatch (CAD) system widely adopted throughout the region, EMS building-block business rules and processes needed to be adjusted and refined to respond to the requirements of the new organizational structure. Completely new inter-PSAP mutual aid agreements had to be put in place, together with an overall new design for unit assignment and location attribution rules. The CAD GIS component had to be enhanced and real-time data communications to and from

private and public care homes had to be made available in order to guarantee a service fully integrated with the regional healthcare system.

The scope of the project was also extended to the control rooms. A centralized next generation data center was required in order to provide EMS with a fault-tolerant, disaster recovery capable underlying infrastructure based on a private cloud solution designed to ensure 24/7/365 availability to call takers, dispatchers, responders and citizens.

## The Business Solution

AREU selected Beta 80’s emma/iO CAD platform running on fault-tolerant ftServer systems from Stratus.

## Best-in-Class CAD Software

The Beta 80 Public Safety CAD platform (emma/iO) provides first and second level PSAPs with the entire set of features required to respond to emergency calls for service. Beta 80’s emma/iO platform is widely appreciated for its unparalleled level of customization, intuitiveness, easy integration with external systems and high-end customer support services.

Beta 80’s emma/iO comes as a complete solution including:

- **Call Taking and Dispatching:** call takers and dispatchers rely on emma/iO’s richness in features accessible by a modern, user-friendly graphical interface. emma/iO’s flexibility provides the ability to tailor the CAD solution according to specific Agency business rules
- **Integrated GIS:** both publicly available and customized maps and cartography layers are at hand to dispatchers and supervisors to streamline incidents and crisis management
- **Mobile Data Communications:** Mobile CAD, AVL support, radio dispatched unit status and cutting edge features such as emergency applications for smartphones and tablets and automatic vehicle collision system support
- **Business Intelligence:** supports supervisors and public safety stakeholders to relentlessly monitor and improve Agency SLAs and business rules

AREU chose emma/iO as its reference CAD system and has been leveraging this platform to play a spearheading role in the European EMS community.



“At the time AREU was appointed to accomplish Lombardy’s PSAP consolidation, the very first concern was to unify the highly fragmented EMS business processes landscape ensuing from the then-operating twelve stand-alone control rooms. Beta 80’s emma/iO flexibility and customization capabilities paved the way to hit such a challenging target.”

## An Always-On Platform

AREU chose the Stratus ftServer platform based on its ability to deliver the highest levels of availability (99.999+) for its most critical CAD solution.

The ftServer's fault-tolerant architecture eliminates single points of failure and addresses the hardware, software, and serviceability issues that can lead to downtime or data loss. Duplex hardware components process the same instructions at precisely the same time. If a component fails, its partner simply continues normal operations. Because replicated components perform the same instructions at the same time, there is no interruption in processing, no loss of performance, and no loss of data integrity—even if a component fails.

The ftServer also features an Automated Uptime™ layer that constantly monitors more than 500 system components and sensors to proactively identify, handle and report faults. A “call-home” feature alerts Stratus of a pending problem before system interruptions can occur.

## The Results

The EMS consolidation has led to a homogenous organizational model among Lombardy's PSAPs, enabling adoption of common procedures, effective collaboration across the region and the possibility for a PSAP to seamlessly step in as a back-up in instances where a PSAP is overstretched or disaster-affected. All these accomplishments have been achieved while maintaining the stringent quality and service levels inherent in Public Safety where even a second's delay may be critical for the patient.

The new region-wide EMS system is also enabling the introduction of next generation services that allow first responders to perform telemedicine advanced tasks, e.g. EKG, emergency echography, real-time images and clinical data transfer to the PSAP and to target hospitals. PSAP situational awareness has been extended beyond the single control room managed area, providing a more effective sharing of field resources and enhanced cooperation procedures in the case of major incidents.

Finally, Lombardy Region's consolidated EMS infrastructure has led to the best cost/effectiveness ratio in Italy and to one of the best in Europe.

The quality and service levels inherent in Public Safety require the highest degree of availability. The Beta 80/Stratus solution for AREU has proven to exceed initial expectations in terms of dependability, accountability and responsiveness, making it possible for AREU to focus on their core business and continuing to make service improvements to ensure the safety of Lombardy's citizens.

## About Beta 80

Beta 80 Group is an Italian Company founded in 1986; since its inception, the Group has been working on the design and development of information systems supporting the activity of Public Safety Answering Points (PSAPs). Headquartered in Milan, Beta 80 Group has 400 employees, 5 branches in Italy and 3 abroad. More than 60 PSAPs have chosen Beta 80 group as their partner of excellence for an overall of 27 Million citizens served and 17 Million managed calls per year. Beta 80 Group is member of EENA (European Emergency Number Association) and NENA (National Emergency Number Association).

To learn more, visit [www.beta80group.it/en](http://www.beta80group.it/en) or [www.io-cad.com/](http://www.io-cad.com/).

## About Stratus Technologies

Stratus Technologies' solutions enable rapid deployment of always-on infrastructures, from enterprise servers to clouds, without any changes to your applications. Stratus products (software and servers) combined with Stratus people, enable customers to prevent downtime before it occurs, ensuring uninterrupted 24/7/365 performance of essential business operations.

To learn more, visit [www.stratus.com](http://www.stratus.com).

“We needed a system that never fails and that's why we chose Stratus ftServer for our entire support infrastructure. We have experienced great results and efficiencies and are setting the standard for other PSAPs in Italy and internationally. Thanks also to our technology partners, Stratus and Beta 80, we were recently named Outstanding Emergency Call Center by the European Emergency Number Association.”

**Piero Maria Brambilla**  
Chief Information Officer, AREU



[www.stratus.com](http://www.stratus.com)

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