

Paper 963

Improved ADMS with an operator friendly interface

// Jorge Pereira, Clara Gouveia, Renan Portelinha INESC TEC, Porto, Portugal // Jorge Pereira Faculty of Economics – University of Porto, Porto, Portugal // Paulo Viegas, José Simões, Pedro Silva, Susana Dias EFACEC, Porto, Portugal // Alexandre Rodrigues, Ana Pereira CEVE – Cooperativa Elétrica Vale d'Este, Famalicão, Portugal // Joana Faria ENEIDA.IO, Coimbra, Portugal // Gabriel Pino GML Transmission, Mirandela, Portugal

New generation ADMS

// This paper presents a new generation of ADMS implementing a predictive operation strategy on top of an open architecture to enhance real-time operator responsiveness and answer to the challenges posed by the increasing penetration of DER.

Grid monitoring and control

// The ongoing challenges faced by the new generation of ADMS highlight the need to rethink how tools are presented to operators.

GRID MONITORING												
Area 1 💽	Area 2 💽	Area 3 🌑	Area 4 💽									
Active Power Production MW	Active Power Consumption MW		Reactive Power Production MVar	Reactive Power Consumption MVar	Geographic 💽 Details							

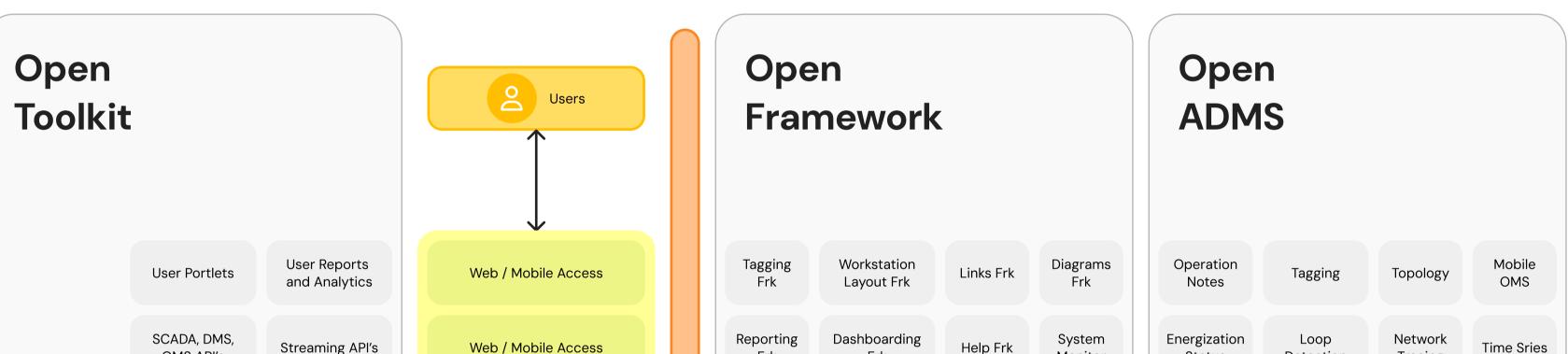
Methodology

// Major obstacles to deploy an ADMS

- Complexity of integrating the various systems of the utility.
- Complexity of adapting the ADMS to the business processes of the utility.

Open Architecture

// Architecture to facilitate seamless integration is the key.





// We propose a single dashboard presenting not only a comprehensive overview of the network but also real-time and predictive insights into potential issues, along with a set of proposed solutions to address them. // **Top Section:** Contains graphics detailing produced power, consumed power, and losses. // **Left Section:** Presents a list of graphical alerts, identified by severity and organized by type and network area. // **Right Section:** Presents the solutions proposed by the algorithms to address the identified issues.

	OMS API's	Streaming AFTS	Web / Mobile Access		Frk	Frk	Monitor	Status	Detection 1	Tracing
User OPC-UA Server	User Workflows	User Events Streaming			Web / Mobile Access	Users Frk	RBAC Frk	Field Teams Management	Default Dahboards	Workstation Web
	User WEB API	User Programs (JS)	Web / Mobile Access	Common			Workflow			
User Portlets	User Portlets	User Reports and Analytics	Web / Mobile Access		BUS	SYNC Editor	or Engine	OPEN API & WEB API		
					SCADA	Historian	Istallation & Maintenance	Distribution Network Analysis	OMS	REMS
			Web / Mobile Access		Streaming Data (Kafka)	SCADA Protocols	Model Cache	Works Management II		itching Training rders Simulation
			\int					Realtime Updates Equipment, Connectivity Impedance Models		
			Data Sources	Data Sources (SCAA, DMS, OMS, WEB, HISTORIAN)				Distributed Generation / Load Models		ic and Dynamic Models
				U						

- Core of ADMS with well-defined API.
- Built on top of an open framework.
- Full stack environment enabling the development of new components.
- A framework providing basic functions: users management, tagging, RBAC, WEB and mobile access, etc.

Conclusions

// A new generation of ADMS, with its predictive operation strategy and open architecture, offers innovative solutions to the challenges posed by the increasing integration of RES and DER.



www.eneida.io



jfaria@eneida.io

CIRED 2025 – Paper No: 963

