



Savremena rešenja za upravljanje i automatizaciju u toplanama

Andrijana Popara / Ivan Jovičić

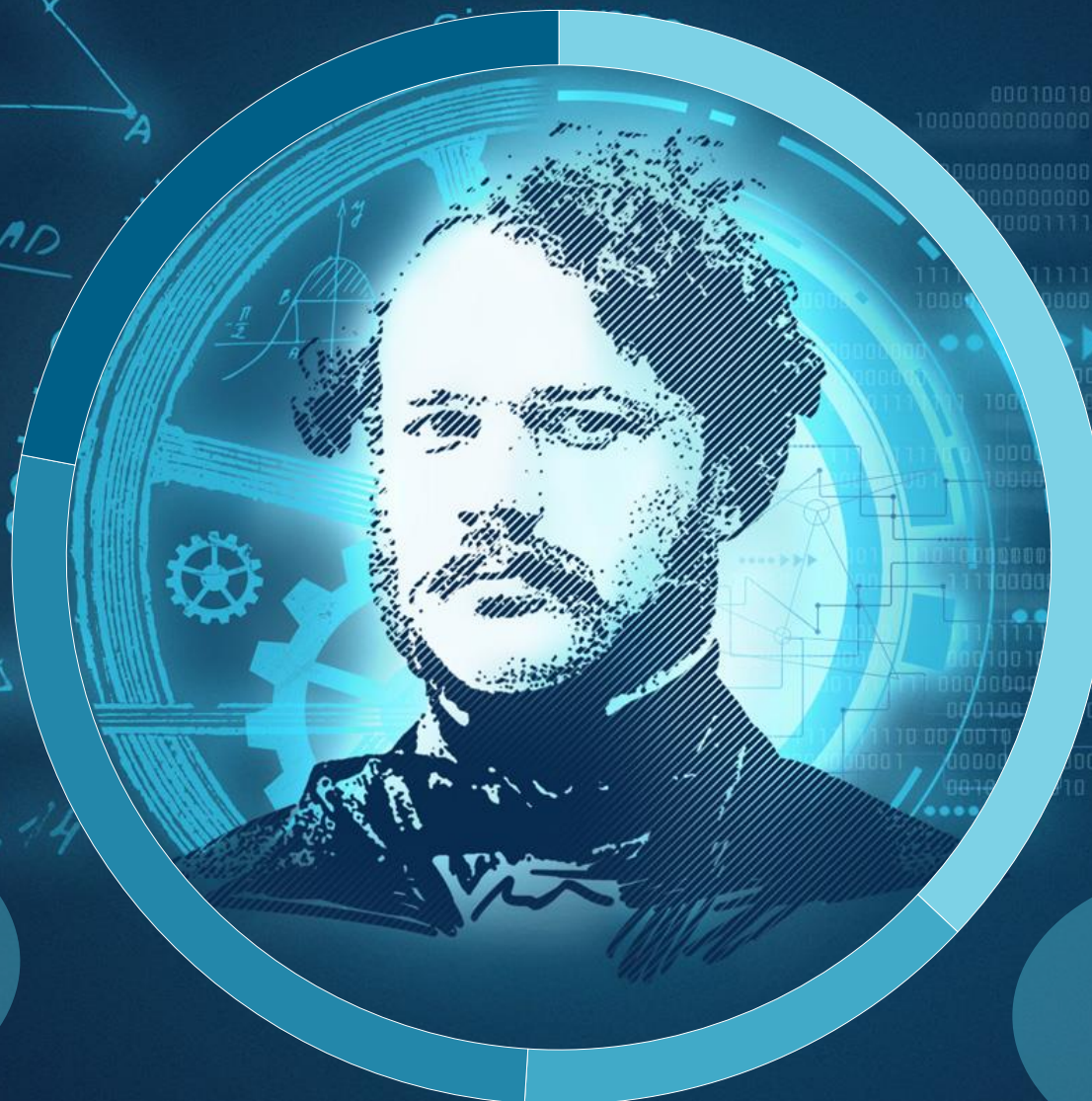
SIEMENS



134
godine u
Srbiji

1996.
osnovan je
Siemens
d.o.o.
Beograd

Oko 1000
zaposlenih



1
proizvodni
pogon u
Srbiji

**Saradnja sa
najvažnijim
subjektima
srpske
ekonomije**

**Pionir u
oblastima
digitalizacije,
automatizacije
i elektrifikacije**



Sedište u Beogradu*

Omladinskih brigada 90v, Novi
Beograd



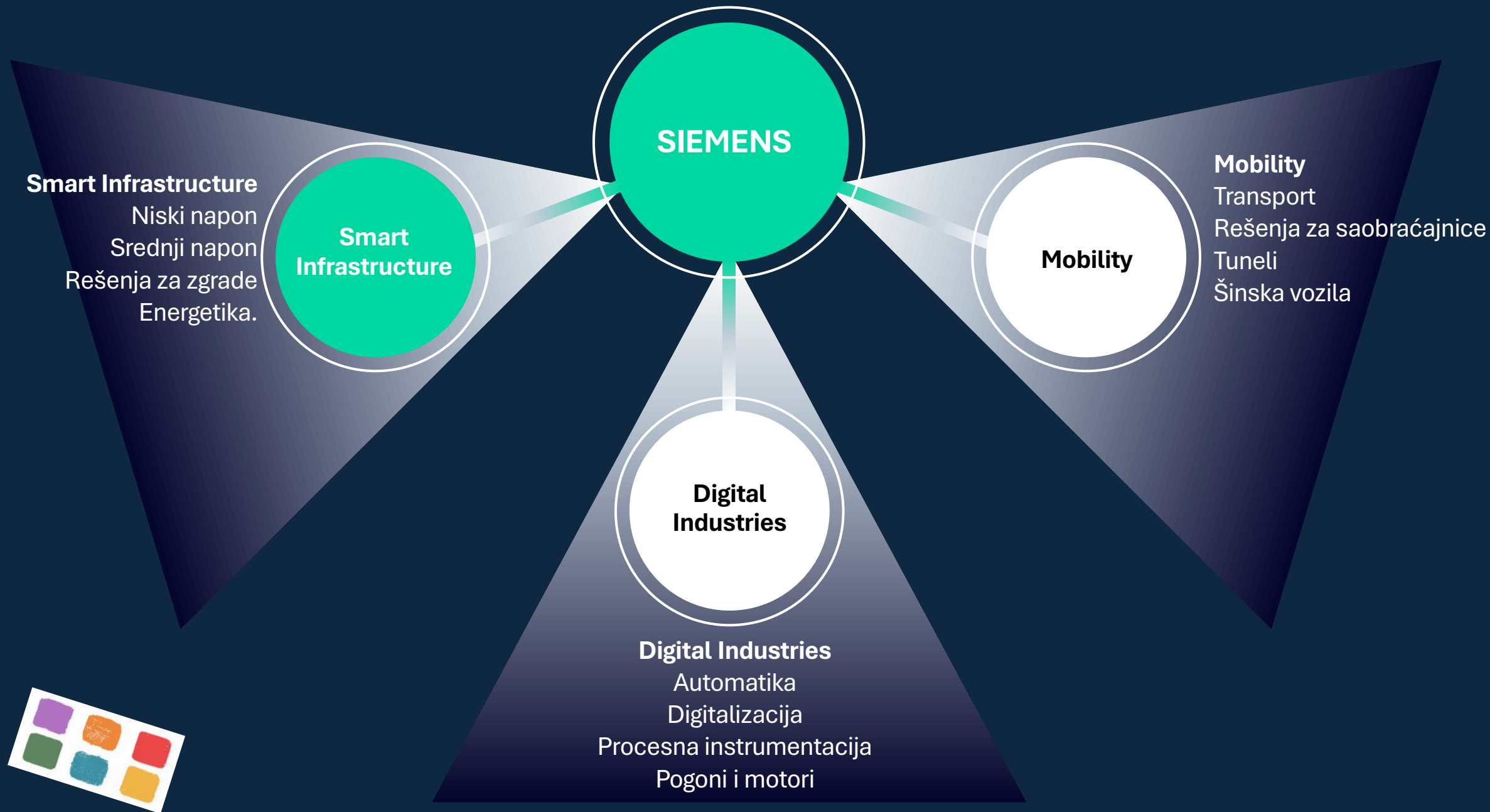
230

Siemens Mobility d.o.o. Cerovac

Sobovica bb, Kragujevac



763



Automation Products and Systems

Leading portfolio for highest customer value based on TIA*

SIMATIC PLC



SIMATIC HMI



SIMATIC IPC



SIMATIC DP



Totally Integrated Automation



TIA PORTAL



PROFINET



SAFETY & SECURITY



ENERGY MANAGEMENT



SCADA / IIOT



Process Instrumentation and process analytics

- ✓ We have broad portfolio, which covers all customer needs
- ✓ Process Instrumentation offers you innovative, single-source measurement solutions to increase plant efficiency and enhance product quality – **flow, temperature, positioner, level, pressure, weighing**
- ✓ Process analytics has comprehensive range of products and systems for process and quality optimization: from the single device to a custom system solution, we can offer an entire range of innovative and proven devices for a wide variety of applications – **extractive continuous process gas analytics, continuous process gas analytics, process gas chromatography, liquid analysis**



Industrial Communication, Identification & Locating

Industrial Communication

Industrial Ethernet



Rugged Communication



Security



Remote



Wireless



CPs, PROFINET and PROFIBUS



Software



Cabling Technology



Industrial Identification & Locating

Optical Identification



RFID



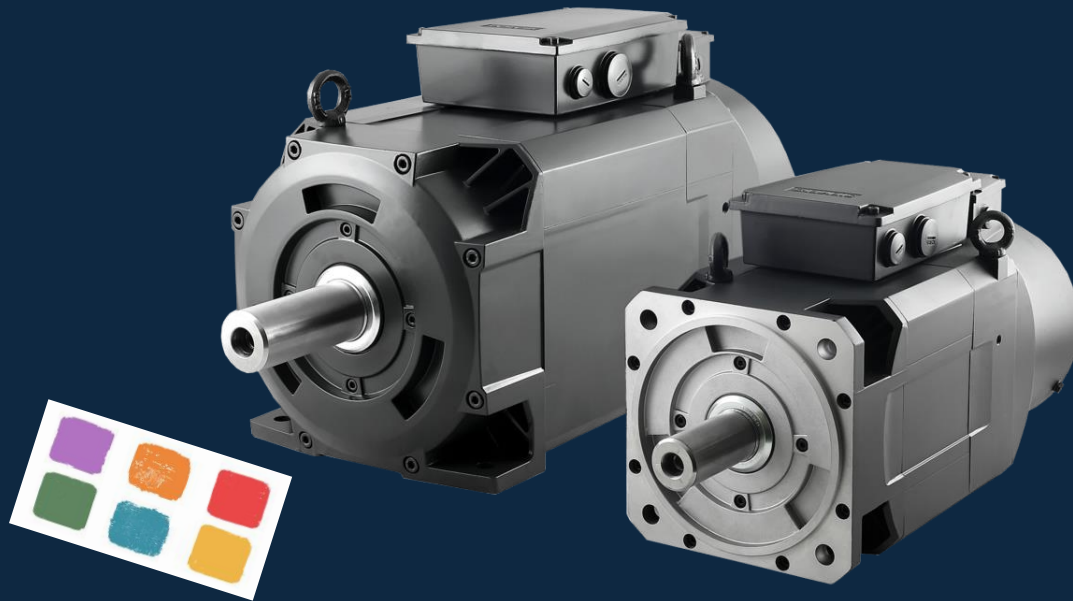
RTLS



Motion Control Products

Drives, Motors, Geared motors

- ✓ As a leading worldwide supplier of motion control products, we have a solution for any application across various industries
- ✓ In our product portfolio we have very broad and extensive range of low voltage and middle voltage variable frequency drives, motors, geared motors and motion control systems



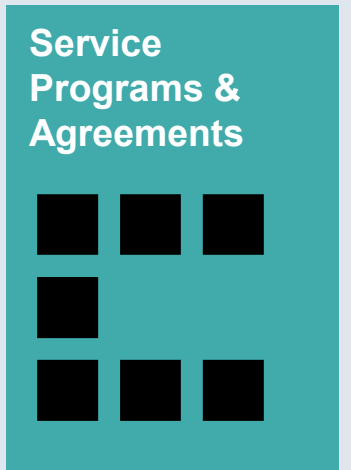
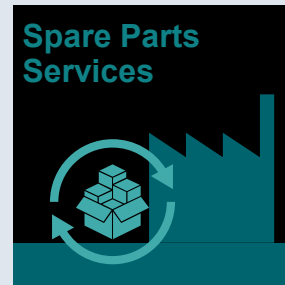
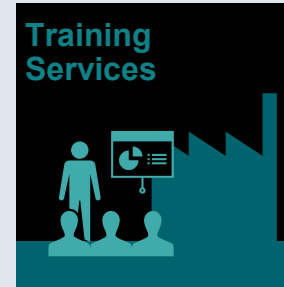
Siemens Serbia

Customer service

- A comprehensive portfolio of services for products, systems and applications as well as Integral Plant Maintenance and data-based services throughout the entire lifecycle of machines and plants.

Siemens DI Customer services:

- ✓ Trainings
- ✓ Support and consulting services
- ✓ Spare parts services
- ✓ Retrofits, repairs
- ✓ Field and maintenance services
- ✓ Product lifecycle management



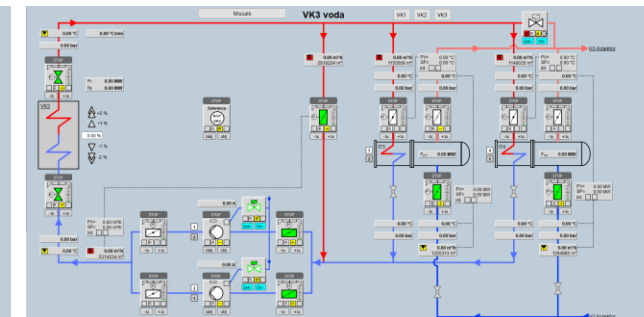
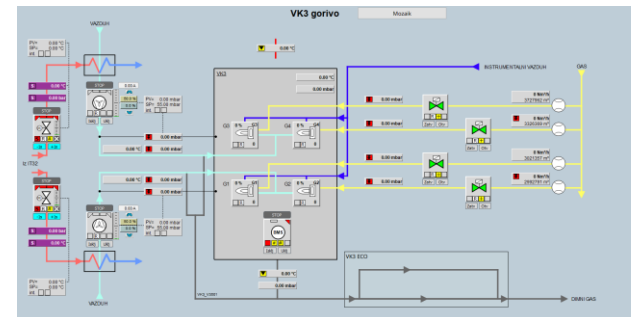
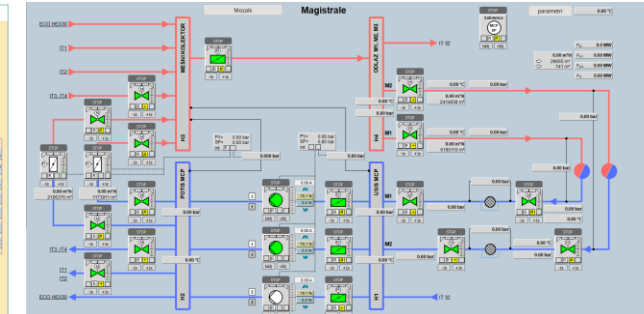
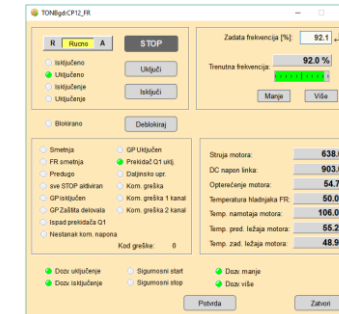
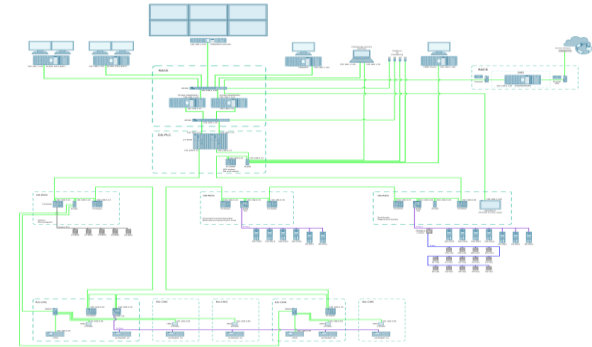
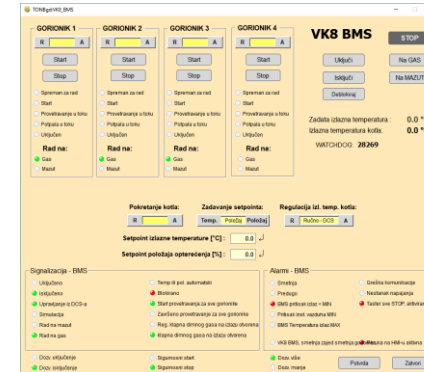
Portfolio projekata u energetsom sektoru

- ❖ Beogradske elektrane – Nadzorno upravljački sistem (NUS)
- ❖ Energetika Kragujevac – Nadzorno upravljački sistem (NUS)
- ❖ Kontinualni monitoring produkata sagorevanja (CEMS)
- ❖ Upravljanje energijom - SIMATIC Energy Manager



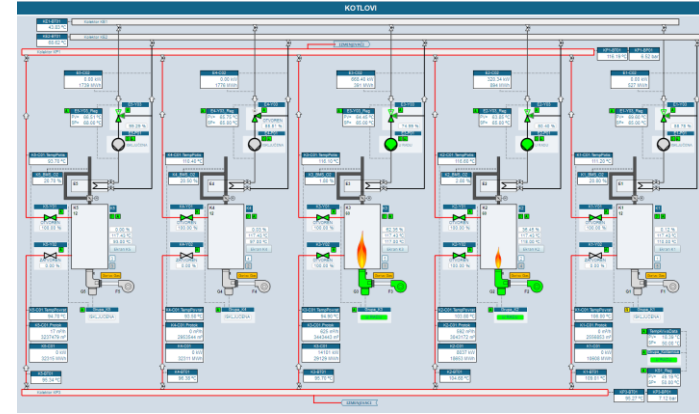
Beogradske elektrane

- Uniformno rešenje za sve toplane u Beogradu
- SCADA (WinCC OA)
- Redundantni PLC i serveri (Profibus&Profinet)
- Algoritam upravljanja baziran na matematičkom modelu
- SITRANS merno-regulaciona oprema
- Integracija i upravljenje svim paketnim jedinicama: BMS, vakumska degazacija, SEPAM...
- Upgrade: SINEMA Remote Connect – Cyber Security



Energetika Kragujevac

- Pet kotlova snage od po 21 MW
- Upravljački sistem baziran na S7-400H i SCADA WinCC OA
- Redundansa na nivou napajanja, CPU-ova, CP-ova, komunikacije (Profinet), servera
- Kabineti sa frekventnim regulatorima cirkulacionih i distributivnih pumpi od 90 do 355 kW
- Algoritam upravljanja baziran na matematičkom modelu
- IT-OT integracija - u sistemu je realizovan WEB server i daljinski pristup
- Sistem je opremljen SIMATIC PDM softverom



CEMS - Continuous Emissions Monitoring System

- Dizajn i isporuka rešenja za kontinualni monitoring produkata sagorevanja u vidu sistema usaglašenih sa evropskim EN i srpskim SRPS standardima SRPS EN14181, SRPS EN 15267, SRPS EN17255 za postrojenja preko 50MW instalisane toplotne snage
- Analiza ugljen monoksida, sumpora, azotnih oksida, kieselonika, vlage, sa merenjem brzine protoka dimnih gasova, prašine, pritiska i temperature
- Isporuka softvera za evoulaciju merenih veličina i generisanje izveštaja usaglašenih sa zahtevima Ministarstva za zaštitu životne sredine RS

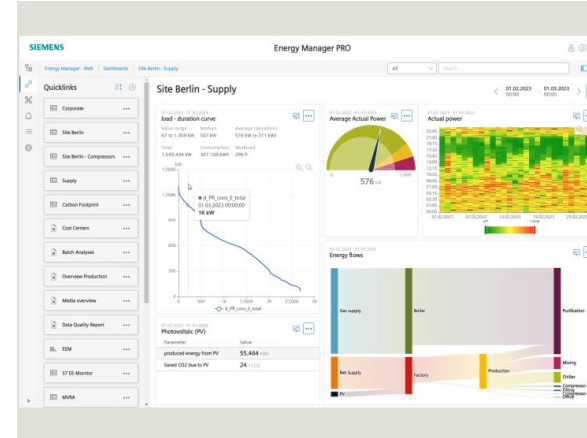
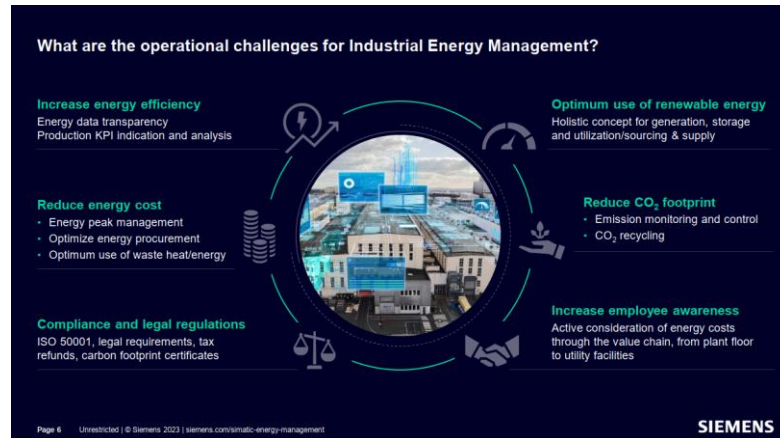
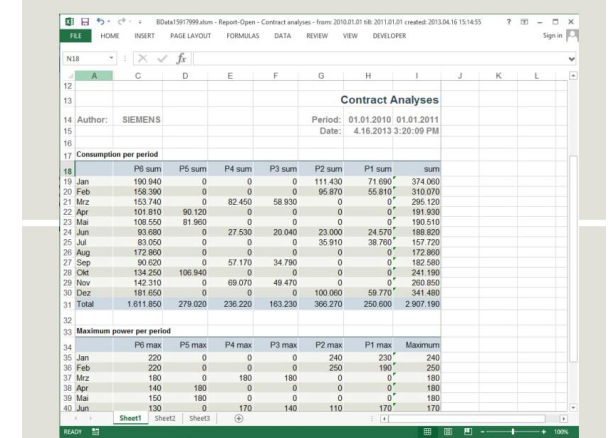




Upravljanje energijom – Energy Manager Pro

SIMATIC Energy Manager Pro omogućava:

- Centralni nadzor potrošnje energije (prikupljanje podataka sa kotlova, pumpi, ventilatora, mernih mesta-podstanica (toplotna energija)...
- Optimizaciju rada kotlova i mreže (analiza potrošnje po podstanicama, vremenskim intervalima)
- Smanjenje troškova goriva (raspodela troškova po potrošačima, bilansi, KPI)
- Praćenje efikasnosti i emisija (Dashboard prikazi - trendovi, grafici..., alarmi...)
- Usklađenost sa ISO 50001 (Automatsko prikupljanje podataka, standardizovani izveštaji)

The screenshot shows a 'Contract Analyses' spreadsheet. It includes a table with columns for months (Jan to Dec) and rows for various energy metrics (P6 sum, P5 sum, P4 sum, P3 sum, P2 sum, P1 sum, sum). The data is organized into a structured format for easy analysis and reporting.

Month	P6 sum	P5 sum	P4 sum	P3 sum	P2 sum	P1 sum	sum
Jan	190.940	0	0	0	111.430	71.690	374.060
Feb	158.390	0	0	0	95.870	55.810	310.070
Mar	153.740	0	82.450	58.930	0	0	295.120
Apr	101.810	90.120	0	0	0	0	191.930
May	108.550	81.900	0	0	0	0	190.450
Jun	93.690	0	27.530	20.040	23.000	24.570	168.820
Jul	83.050	0	0	0	35.910	38.700	157.720
Aug	172.960	0	0	0	0	0	172.960
Sep	90.620	0	57.170	34.780	0	0	182.580
Oct	134.250	106.940	0	0	0	0	241.190
Nov	142.310	0	69.070	49.470	0	0	260.850
Dec	181.650	0	0	100.060	59.770	341.480	341.480
Total	1.611.850	279.020	238.220	163.230	366.270	250.600	2.907.190

Hvala na pažnji!
Thank you for your attention!

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