



DESIGNED & ENGINEERED IN TÜRKİYE

IP-BASED CONFERENCE AND PAGING SYSTEM

Paging System

**One key. Thousands of points.
At the same time.**

A centrally managed, multi-zone, two-way paging and conference platform for power transmission and distribution centres, rail systems, ports and airports, industrial campuses, public and defence facilities. The operator picks the zone and direction and presses "Start Announcement"; once every point is bridged the "ready to speak" signal comes up, and every announcement is recorded and audited.

2,000+

POINTS WITH ONE
KEY

< 1 s

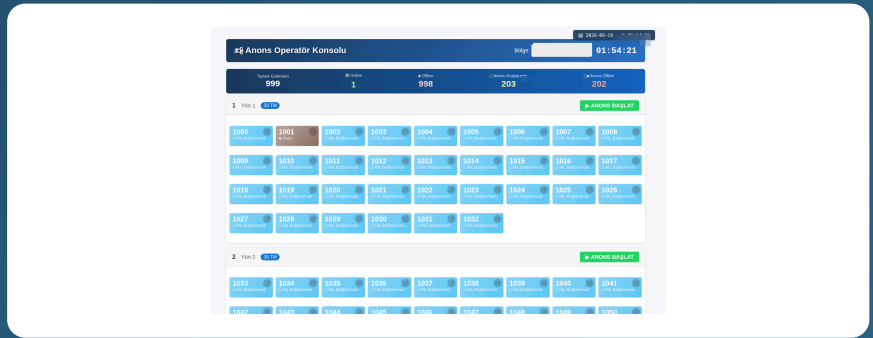
POINT JOIN TIME

**Zone ›
Direction ›
Point**

SELECTIVE
PAGING

100%

RECORDED AND
AUDITED



Paging Operator Console · zone → direction → point cards, live status, one-key Start Announcement



01

CORPORATE

Reaching Everyone in the Field at Once

Simgenet Mühendislik is a Turkish engineering company delivering industrial networking and critical-infrastructure communication systems. Everything we learned from the paging and conference systems we have built in power transmission centres for years went into the Simgenet Paging System, **developed entirely in house**: the operator speaks with one key, the field can answer, and every announcement stays on record.

2000

FOUNDED

500+

PROJECTS DELIVERED

30+

COUNTRIES SERVED

100+

PRODUCTS

■ Why our own paging system

- In a critical facility paging is not "putting sound on a speaker": the answer to **who, when, which zone, how many points joined** must be on record
- The operator must see hundreds of points on one screen, speak with one key and approve talk requests coming from the field
- Software entirely in house; same platform as the Simgenet PBX Server, also sold as a separate product (paging license)
- Vendor-independent SIP speakers, phones, analog gateways and radio integration — existing field equipment is kept

■ Who it is for

- Power transmission / distribution — substations, load dispatch, regional directorates
- Rail systems — stations, lines and depots
- Ports, airports, industrial campuses — wide-area, multi-zone operations
- Public, defence and municipal facilities — critical communication and emergency paging

As if in the same room. The centre and hundreds of field points talk as if they were in one room, over full-duplex conference and paging; an authorized operator can open or mute a remote microphone and reach the whole zone with one key in an emergency.

Our Mission

To deliver innovative, reliable and sustainable technology solutions for industrial networking and critical-infrastructure communication, safeguarding our customers' business continuity.

Our Vision

To become Türkiye's most trusted and innovative network-infrastructure technology partner and a globally recognized brand.

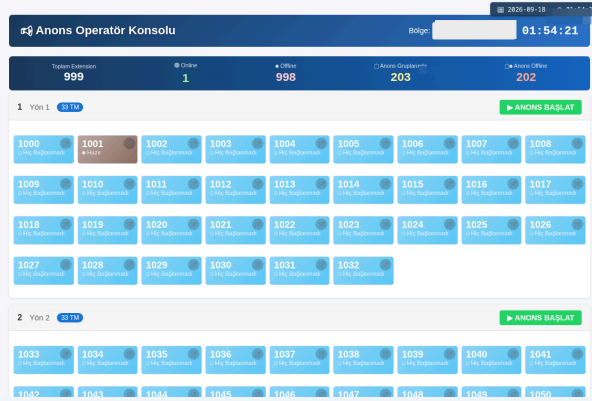


02

OPERATOR CONSOLE

Pick the Zone, Pick the Direction, Speak

The operator console shows the whole field on one screen in a **zone** → **direction** → **point** hierarchy. Every point (substation, speaker, phone) is a card and its colour tells the live state: connected, ready, offline. When "Start Announcement" is pressed for a direction, the system bridges every point in that direction and raises the **"Ready to speak"** signal — the operator does not start talking before everyone is connected.



Paging Operator Console

Top strip: total points, online / offline and points in paging groups; below, direction headers (Direction 1 · 33 TM, Direction 2 · 33 TM ...) and point cards. Per-direction, multi-direction or whole-zone paging from the same screen.

■ Selective paging

- Single point, one direction, several directions or the whole zone
- Paging groups and paging areas defined in advance
- Priority: an emergency page pre-empts a scheduled one

■ Emergency paging

- Whole zone with one key; list of unanswered points immediately
- Points that did not join appear in the report and the alarm
- Retry and re-call of missing points

■ Field to centre

- Talk request / approval flow: the field asks, the operator approves
- Full-duplex conference; barge-in, callback, priority override
- Remote microphone on / off (authorized user)

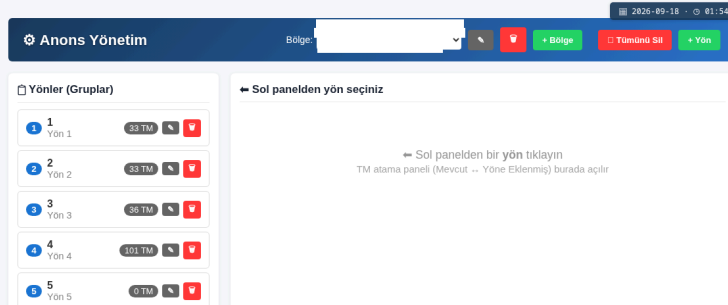


03

STRUCTURE AND ENDPOINTS

Unlimited Zones, Directions and Points

The field structure does not adapt to the software; the software adapts to the field. Zones (province / operating directorate), directions (line / serial direction) and points (substation, station, speaker line) are defined in the web interface; points are dragged between directions and one point can belong to several paging groups.



Paging Management screen

Left: the zone's directions and the number of points in each (33 · 33 · 36 · 101 TM ...); right: the "Available ↔ Assigned" panel of the selected direction. Add / delete zone, add direction, bulk editing on the same screen.

■ Endpoints — vendor independent

- **SIP speakers and IP phones:** any SIP-compatible device becomes a point
- **Analog speaker lines:** existing speaker wiring is kept via an FXS gateway
- **Analog / digital radio:** radio channels join the page through VoIP/SIP integration
- **Web phone:** operator or point from a browser, no software to install
- PBXs with PRI / FXS / FXO interfaces and vendor-independent VoIP gateways

■ Conference and intercom

- Full-duplex conference: talk and listen at the same time
- Add / remove participants, add an emergency user
- Authorization-based access: each zone with its own points; the administrator grants cross-zone permission
- Serial-direction structure: users assigned to directions, dynamic switching
- Echo cancellation (G.168), wideband audio (G.722 / Opus), video calls (H.264 / VP8)

Real-time status. The online / offline / in-page state of every point is colour coded; the "why it did not connect" line goes into the event log in plain language — the field team reads instead of guessing.



04

RECORDING AND AUDIT

Every Announcement on Record

In a critical facility an announcement is an operating instruction; afterwards the question "was it heard, who gave it, who did not join" must be answered with evidence. The Simgenet Paging System keeps every announcement as **audio recording + audit trail + attendance report**, time-stamped with the central clock.

■ Audio recording and archive

- Every announcement recorded automatically; date, zone, direction, duration, format
- Playback and download from the archive; retention period and storage target configurable
- Targets: local, SFTP / NFS / SMB / S3, Simgenet Storage Server (WORM, RFC 3161 timestamp)

■ Audit trail

- Who, when, which zone / direction, how many points joined
- Filter by event type: operator end, unregistered point, busy point, join, invite
- The whole event chain of one announcement by session ID

■ Reports

- Session report, point (TM) performance report, penalty / compliance report
- Date × user × zone × serial-direction matrix filtering
- Search, export; 5651 / KVKK (Turkish data-protection) retention

Example: The Trail of One Announcement

STEP	RECORD	WHERE
Operator presses "Start Announcement"	User, zone, direction, number of target points, timestamp	Audit trail
Points are bridged	Joined / unregistered / busy points one by one; join time	Audit trail + point performance report
"Ready to speak"	All-points-connected signal; the operator starts talking	Console + session report
During the announcement	Audio recording; talk request / approval events from the field	Recordings archive
Operator ends	Duration, attendance summary, "not penal / suspicious" classification	Audit trail + penalty / compliance report

Central clock. All records are stamped with the central time source; deployed together with the Simgenet GNSS Server, the paging record, the SCADA event and the protection event are read on the same time axis.



05

SCALE AND CONTINUITY

From a Single Site to Nationwide

The same software scales from a single substation to a nationwide multi-zone operation. A single node carries simultaneous paging to **up to 2,000 points** stably; when nodes are clustered, zones are added linearly and the system runs on top of a **100,000-user Simgenet PBX cluster**.

2,000POINTS PER NODE,
SIMULTANEOUS**< 1 s**

10–50 POINTS JOIN

< 10 s

1,000 POINTS JOIN

100K

USERS — PBX CLUSTER

■ Scale

- Single node: 5 directions × 400 points simultaneous paging, 2,000 participants on one bridge
- Join time: 10–50 points < 1 s · 50–300 points < 3 s · 300–1,000 points < 10 s
- Nationwide multi-zone: 2–3,000 points per node, linear growth with clustering
- Unlimited zone, serial-direction, user and paging-group definitions

■ Continuity

- Centre–field redundant operator console: if the centre goes down the field console takes over
- PBX clustering and HA keep the paging service running through node loss
- Scheduled / automatic paging: shifts, maintenance, planned announcements
- SCADA / event-triggered paging: started from external systems via REST / webhook

Artificial Intelligence Add-on

As an add-on on a separate GPU server: **text-to-speech (TTS) announcement generation** — the operator types, the system voices it and pages the selected zone; knowledge-based voice greeting / routing and announcement summaries come with the same add-on.

Deployment in Four Steps

1 · Install

Plug-and-play ISO, wizard:
network → license →
administrator

2 · Structure

Zone / direction / point
definitions, bulk CSV import

3 · Endpoints

SIP speakers / phones, FXS
gateway, radio; automatic
profile

4 · Acceptance

Test announcement,
attendance report, recording
and retention check



06

SECURITY AND PLATFORM

PBX-Grade Security, Easy to Use

The Paging System runs on the same platform as the Simgenet PBX Server: the SIP security gateway, encrypted audio, central identity and role-based authorization apply to paging as well. Management from a single web interface; no configuration files, live "Test" buttons instead.

■ Security

- TLS for SIP, SRTP for audio;
Secure Mode: unencrypted registrations rejected
- SIP security gateway, toll-fraud protection, firewall
- Certificate inventory and automatic renewal
- VPN: encrypted field connections over IPsec; IP/MPLS compatible

■ Identity and authorization

- AAA: RADIUS / TACACS+ / LDAP-AD; central identity with the Simgenet NAC Server
- Roles: Administrator, Operator, Viewer, Technician
- Zone-based authorization: an operator sees and pages only their own zone
- Every action in the audit trail

■ User friendly

- Setup wizard, single dashboard: license, health, services, capacity
- Thousands of points in one CSV file; preview + apply
- Web phone from the browser: testing and paging without installing software
- Events explained in plain language; SNMP / syslog / e-mail notification

Platform Options

Paging Edge

Single site · module on the SMGOS router · with PBX Edge (SMG-PBX-E)

Paging Server

Region / operation · single server, up to 2,000 points · with PBX Server (SMG-PBX-S)

Paging Cluster

Nationwide · multi-node, HA · 100,000-user PBX cluster

■ Hardware and virtualization

- Plug-and-play ISO on Simgenet server hardware (encrypted disk + TPM)
- As a virtual machine on enterprise virtualization environments
- Signed, hardware-bound license; paging capacity unlocked by license

■ Simgenet ecosystem

- **PBX Server:** same platform — PBX + paging + recording in one box
- **GNSS Server:** central timestamps · **Storage Server:** recording archive, WORM
- **NAC Server:** administrator identity · **SVP:** capacity and join-time acceptance report



07

SPECIFICATIONS

Simgenet Paging System

FEATURE	VALUE
Product class	IP-based, multi-zone, full-duplex conference and paging platform (SMG-ANONS); same platform as the PBX Server, separate license; software in house at Simgenet
Operator console	Zone → direction → point cards · live status (connected / ready / offline) · one-key Start Announcement · "Ready to speak" signal · direction / multi-direction / whole zone · emergency page + unanswered-point tracking · talk request / approval
Structure	Unlimited zones, serial directions, points, paging groups and paging areas · drag-and-drop assignment · bulk CSV import · phone book
Capacity	Up to 2,000 points per node simultaneously (5 directions × 400) · join 10–50 points < 1 s, 50–300 < 3 s, 300–1,000 < 10 s · linear scale with clustering, 100,000-user PBX cluster
Conference / intercom	Full-duplex conference · add / remove / emergency include · barge-in, callback, priority override · remote microphone control · zone-based authorization, administrator cross-zone permission
Endpoints	SIP speakers / IP phones (vendor independent) · analog speaker lines via FXS gateway · analog / digital radio (VoIP/SIP) · web phone (browser) · PRI / FXS / FXO, VoIP gateways
Audio / video	G.711 (A/μ), G.722, G.723.1, G.726, G.729, GSM, iLBC, Speex, Opus, SILK, AMR / AMR-WB · H.261 / H.263 / H.264 / VP8 · G.168 echo cancellation · DTMF RFC 2833 / SIP INFO / in-band · T.38 fax
Recording and audit	Audio recording of every announcement (archive, download, retention) · audit trail (who / when / zone / points joined) · session, point performance, penalty / compliance reports · matrix filtering · central clock timestamp
Recording retention	Local · SFTP / NFS / SMB / S3 · Simgenet Storage Server (WORM, RFC 3161) · 5651 / KVKK
Automation	Scheduled / automatic paging · priority (emergency > scheduled) · SCADA / event-triggered paging (REST / webhook) · AI add-on (separate GPU server): TTS announcements, voice greeting / routing, summaries
Security	SIP-TLS, SRTP, Secure Mode · SIP security gateway, toll-fraud protection, firewall · certificate inventory + automatic renewal · IPsec VPN
AAA and roles	RADIUS / TACACS+ / LDAP-AD · roles: Administrator, Operator, Viewer, Technician · zone-based authorization · central identity with the Simgenet NAC Server
Management	Web interface (TR/EN) · setup and trunk wizards · single dashboard · SNMP / syslog / e-mail / webhook · REST API · backup / restore
Continuity	Centre–field redundant operator console · PBX cluster / HA · service continues through node loss
Platform	Paging Edge (SMGOS router) · Paging Server (2,000 points) · Paging Cluster (multi-node) · ISO or virtual machine · signed license



Why Simgenet Paging System

One key, thousands of points

Zone → direction → point; up to 2,000 points per node simultaneously, with the "ready to speak" signal.

Every announcement on record

Audio recording, audit trail, attendance and compliance reports; central clock timestamp; 5651 / KVKK retention.

Keeps the existing field

Vendor-independent SIP, analog speaker lines (FXS), radio integration, web phone.

Entirely ours

Software in house at Simgenet; deployed and accepted from one source with PBX, GNSS, Storage, NAC and SVP.

GET IN TOUCH

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