

Himss Analytics **STAGE 7**





# YOZGAT CITY HOSPITAL

First City Hospital of Turkey



475 beds



142.000 m<sup>2</sup>



80.000  
patient/month





# YOZGAT CITY HOSPITAL

First HIMSS7 Certified City Hospital of Turkey

HIMSS Analytics **STAGE 7**

One of six HIMSS7  
certified hospital  
in Europe

One of best digital  
hospital in the  
world

First digital hospital  
certified with HIMSS7  
in Europe with new  
criterias





# WHAT IS HIMSS EMRAM?

The **HIMSS** Analytics Electronic Medical Record Adoption Model (**EMRAM**)<sup>SM</sup> was created to track healthcare organizations' progress towards achieving a paperless patient record environment. Hospitals and ambulatory care facilities are scored based on their level of EMR adoption from stage 0 through stage 7.

STAGE	<div><div><div>HIMSS Analytics</div><div>EMRAM</div></div><div>EMR Adoption Model Cumulative Capabilities</div></div>
7	Complete EMR; External HIE; Data Analytics, Governance, Disaster Recovery, Privacy and Security
6	Technology Enabled Medication, Blood Products, and Human Milk Administration; Risk Reporting; Full CDS
5	Physician documentation using structured templates; Intrusion/Device Protection
4	CPOE with CDS; Nursing and Allied Health Documentation; Basic Business Continuity
3	Nursing and Allied Health Documentation; eMAR; Role-Based Security
2	CDR; Internal Interoperability; Basic Security
1	Ancillaries - Laboratory, Pharmacy, and Radiology/Cardiology information systems; PACS; Digital non-DICOM image management
0	All three ancillaries not installed



# PREPARATION DETAILS

## HIMSS Stage 6

Prior to be certified with HIMSS Stage7, HIMSS Stage6 certification is required.

Yozgat City Hospital got it's Stage6 certification on **September 13th 2017** and became the **first City Hospital of Turkey certified with HIMSS6**

Software  
development

Clinical decision  
support systems

Medical device  
integrations

Infrastructure  
improvements



# PREPARATION DETAILS

## HIMSS Stage 7

HIMSS Analytics **STAGE 7**

More than one  
year preparation  
period

Working together  
with health  
professionals and IT  
teams for  
cultural  
transformation

HIS integration for  
medical devices

Hundreds of software  
functionalities  
implemented to  
achieve best  
applications





# PREPARATION DETAILS

## HIMSS Stage 7

HIMSS Analytics **STAGE 7**

Bolu Hospital visit  
November 2017

GAP analysis  
June 2018

Coordinated team  
work with technical and  
administrative teams

Tracking and reporting  
project status regularly.







# Data Center



- Active-Active 2 Data Centers
- International Standards
  - Uptime Institute,
  - TIA 942,
  - ANSI/BICSI
- Modern System Architecture
- Synchronized Structure
- Full Redundant
- 7/24 Online Monitoring
- High Availability
- Zero down-time tolerance







# HIS Medical Modules



Security



Datebook



Patient  
Recording



Patient  
Admittance



Out Patient



Inpatient



Hemodialyses



Treatment Plan



Vaccination



Gynaecological  
Diseases



Operating  
Theater



Performance  
Follow-Up



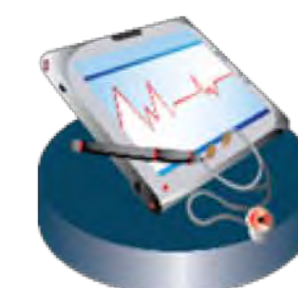
Pharmacy



Blood Bank



Pediatric



E-Medical Records



E-Optics



Home Healthcare



Invoicing



Physiotherapy



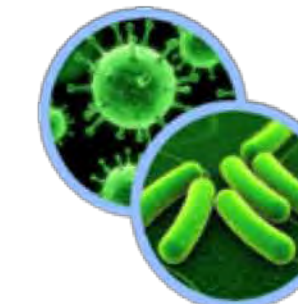
Nursing Care



Cancer Follow  
Up



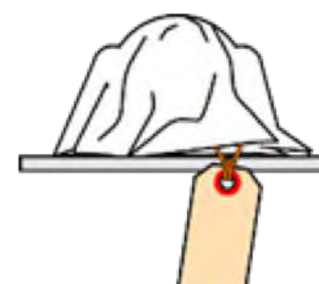
Consultation



Infectious  
Diseases



Archive



Morgue



Pathology



Prosthesis



Psychiatry



Information  
Desk



Health  
Committee



Announcement  
& Survey



# HIS Financial Modules & Others



Accounting



Inventory Management



Fixture Follow-Up



Purchasing



Sterilization



E-Pay Office



Equipment Management



Medical Waste Management



Cafeteria Management



Personnel Payrolling



Personnel Records



Personnel Attendance Follow-Up



Form Designing



Mailing



SMS



Statistics



Patient Information Monitors



Kiosks





# HIS Integration



- HIS integration for medical devices / processes
- Digital archiving for medical records
- Instant Access to medical data via HIS





# Clinical Decision Support

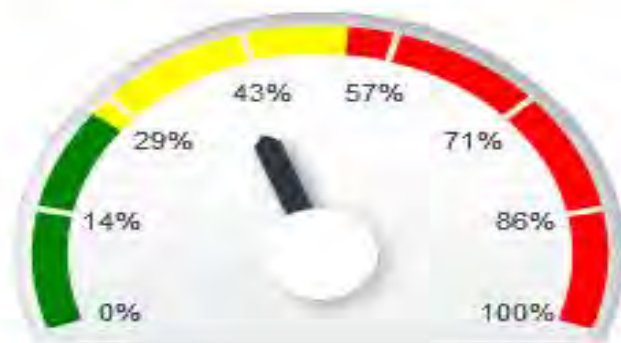
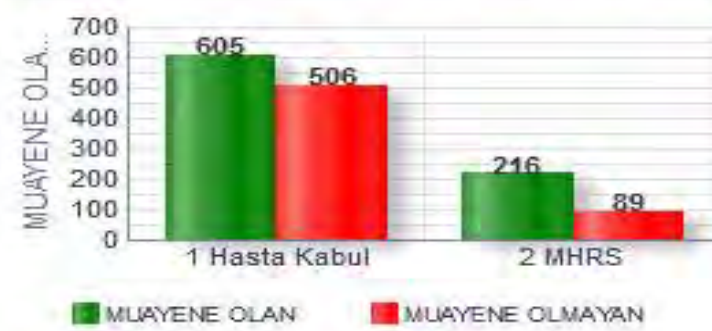


- Clinical decision support systems for doctors
- Clinical decision support systems for nurses

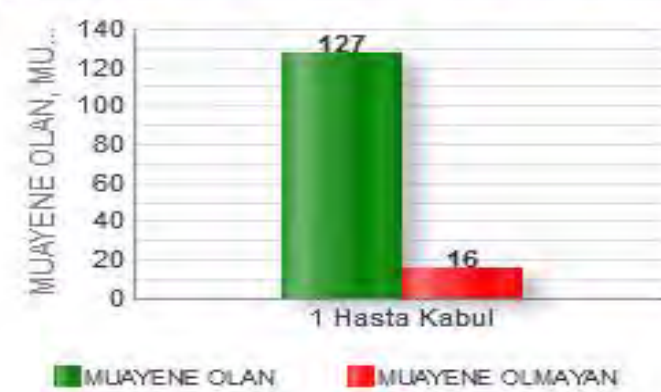


**Poliklinik Ayaktan Hasta**  
**1416**

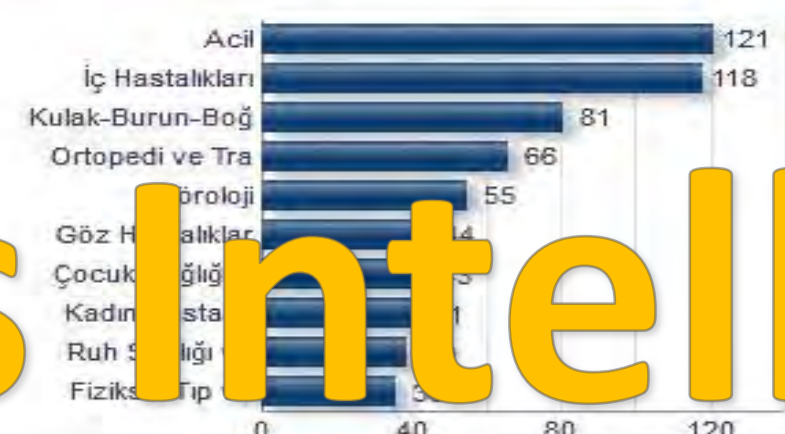
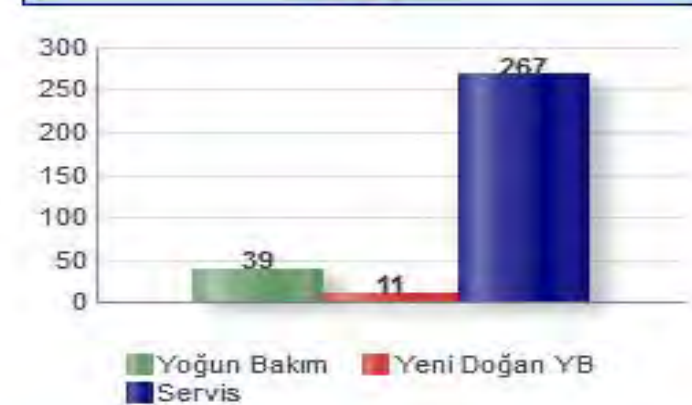
Kaydolan Toplam Ayaktan Hasta Sayısı

**POLİKLİNİKLERİN SAATLİK YOĞUNLUĞU****Acil Ayaktan Hasta**  
**143**

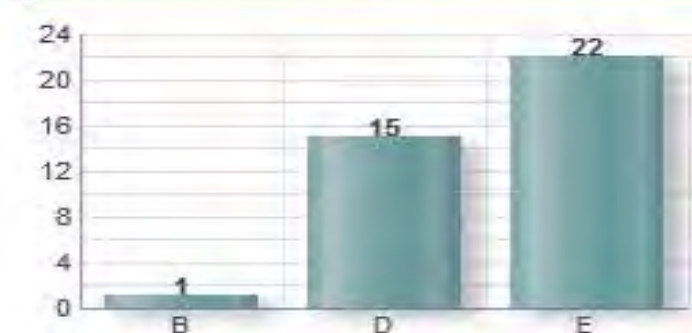
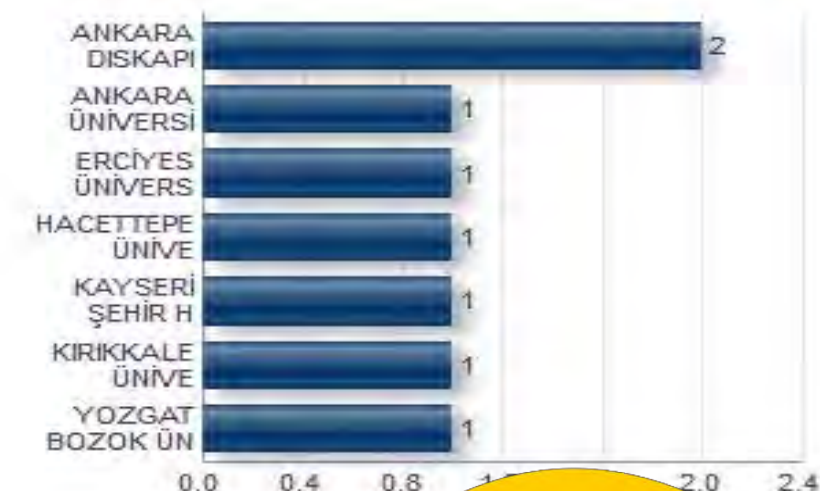
Kaydolan Toplam Ayaktan Hasta Sayısı

**ACIL TRİYAJ DURUM****Branş / Muayene Olan Sayısı**

İlk 10 Branş

**Yatan Hasta**  
**317****Yatak Sayısı**  
**501****DOLU YATAK**

0% - 33% 33% - 67% 67% - 100%

**Reçete**  
**332****İstek Yapılan Hasta**  
**593**Ölüm Verisi Bulunmamaktadır.  
[Refresh](#)**Ameliyat**  
**38**Bugüne ait doğum verisi bulunmamaktadır.  
[Refresh](#)Bugüne ait doğum verisi bulunmamaktadır.  
[Refresh](#)**Kurum Dışı Sevk**  
**8**  
**İlk 10 Kurum**

# Business Intelligence

- Business intelligence applications for administration
- KPI's for better performance







# Mobile Medical PC



- Mobility
- Bed-side access to HIS
- Medical carry box and trash bin





# Medical Tablet



- Bed-side applications
- Bed-side medical record
- Medicine validation
- Service record
- Online access to patient records





# RFID Integration



- Integration with RFID Systems
- Real time tracking solution
- New born safety
- Operation room patient tracking
- Asset tracking





# PACS Solution



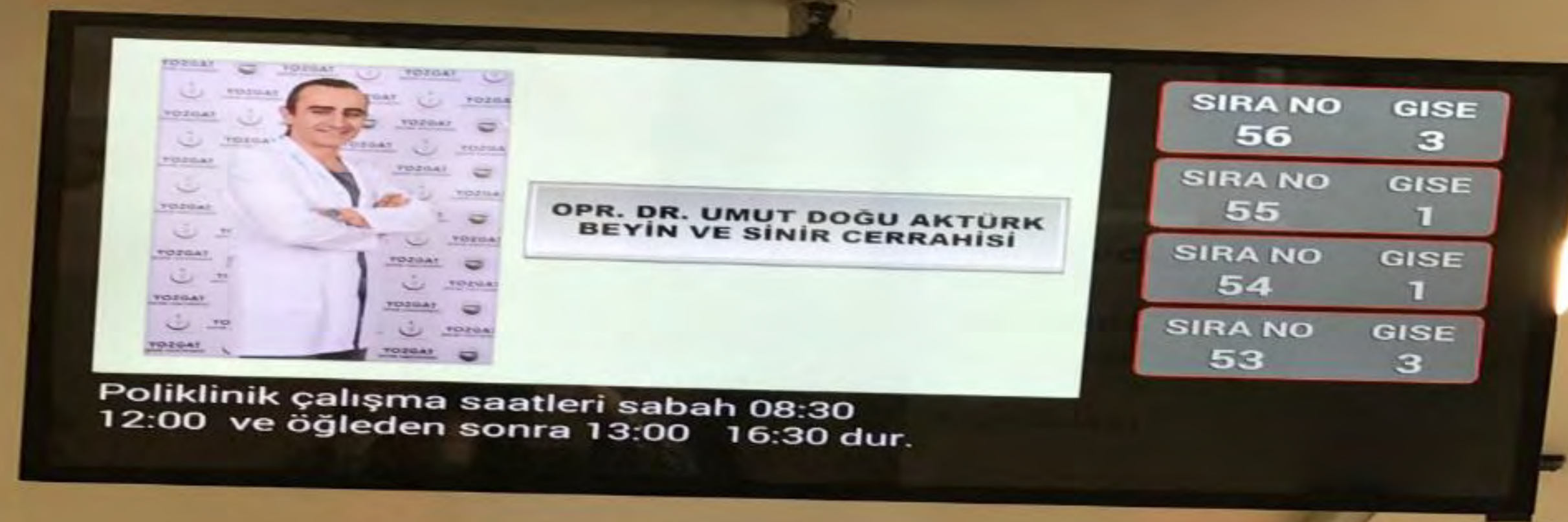


# Kiosk

- Getting queue number
- Getting doctor appointment
- Self check-in
- Getting laboratory results







OPR. DR. UMUT DOĞU AKTÜRK  
BEYİN VE SİNİR CERRAHİSİ

Poliklinik çalışma saatleri sabah 08:30  
12:00 ve öğleden sonra 13:00 16:30 dur.

SIRA NO	GISE
56	3
55	1
54	1
53	3



UZ. DR. MERYEM TUBA DOKSUNGÜR  
NÖROLOJİ

Poliklinik çalışma saatleri sabah 08:30  
12:00 ve öğleden sonra 13:00 16:30 dur.

SIRA NO	GISE
56	3
55	1
54	1
53	3

055 1

000 93

056 3

Hasta Kayıt

# Patient Information Screens



- Online doctor appointment follow-up
- Doctor information
- Patient guidance





# Patient Admission Desks



- Patient record and admission
- Getting doctor appointment





# Security



- HIS & CCTV System Integration
- Instant action for the events like baby kidnapping

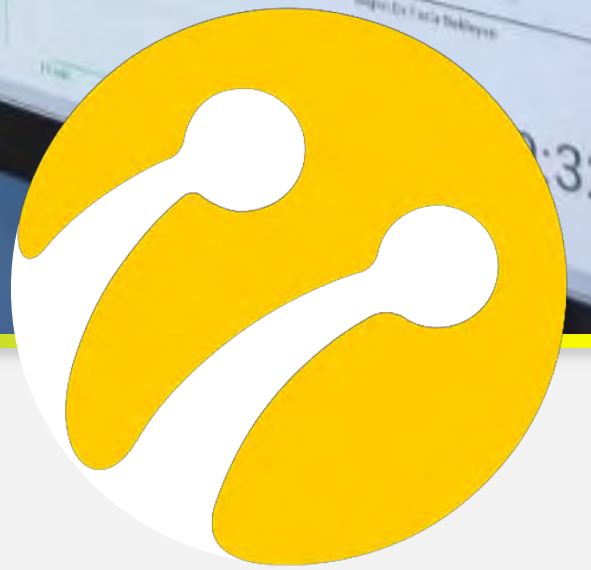




# Central Help Desk

- 7/24 Service
- Instant call response
- Ticket dispatching

- Measurable performance
- Better service quality
- Lower costs





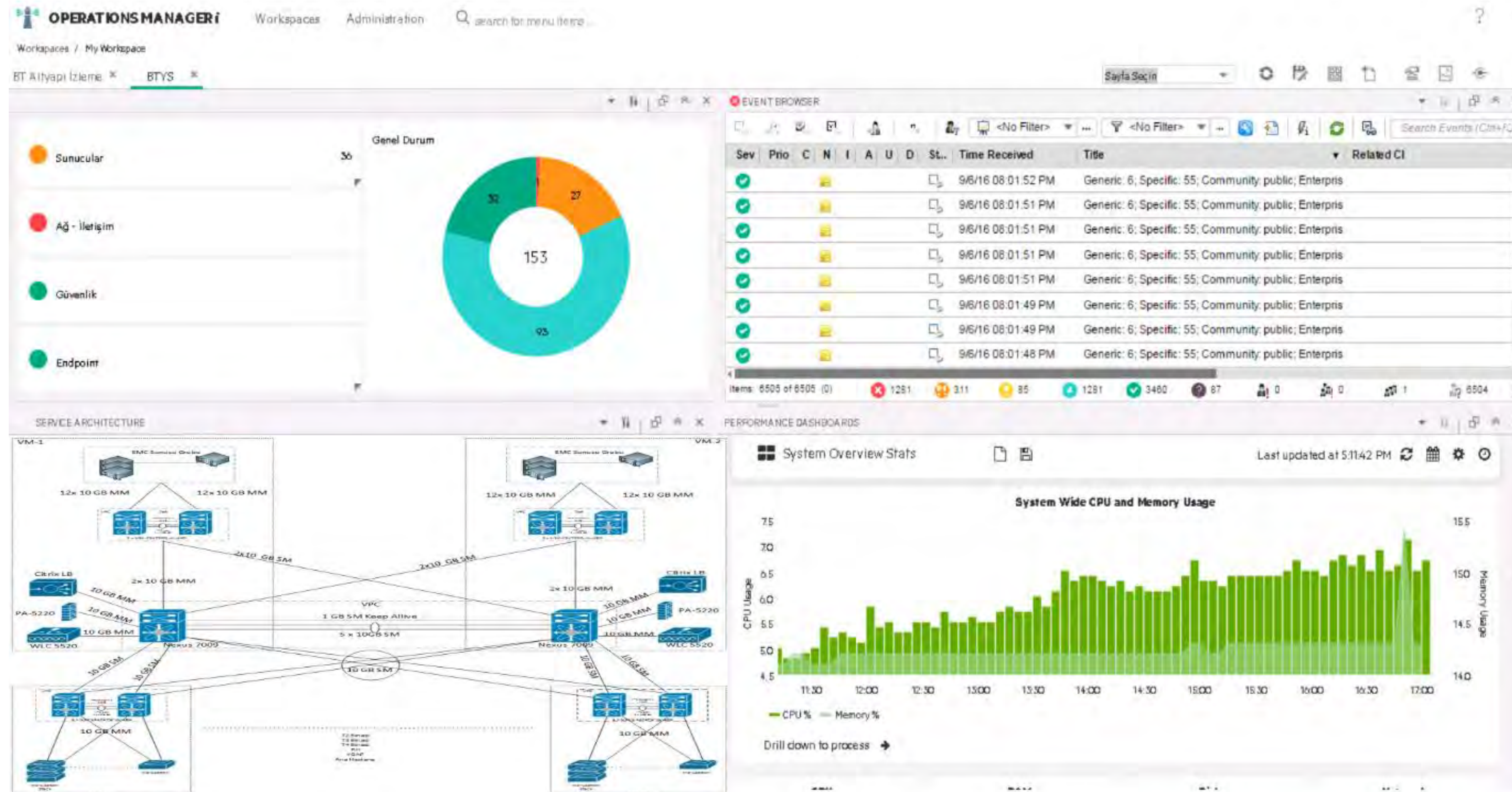
# Service Operation Center

- 7/24 Online monitoring
- Remote Level2-Level3 support
- System performance and security checks
- System updates



The screenshot displays the VMware vSphere interface, divided into two main sections:

- Service Architecture:** A complex network diagram showing the connectivity between various components. It includes two VMs (VM-1 and VM-2) connected to a central VPC (Virtual Private Cloud) via 2x 10 GB MM (Memory-Mapped I/O) links. The VPC is connected to a central Nexus 7000 switch, which is further connected to a 10 GB MM link. The diagram also shows connections to Citrix LB (Load Balancer), PA-5220 (PowerEdge server), and WLC 5520 (Wireless LAN Controller). The central Nexus 7000 switch is connected to a 10 GB MM link, which is further connected to a 10 GB MM link. The diagram also shows connections to Citrix LB, PA-5220, and WLC 5520.
- Performance Dashboard:** A bar chart titled "System Wide CPU and Memory Usage" showing CPU and Memory usage over time. The x-axis represents time from 11:00 to 17:00. The y-axis represents CPU Usage (left, 4.5 to 7.5) and Memory Usage (right, 14.0 to 15.5). The chart shows a general upward trend in both CPU and Memory usage, with a significant peak around 14:00. A legend indicates that green bars represent CPU % and blue bars represent Memory %.





# IT Infrastructure Monitoring

## IT - All Services

BTYS - TUM SERVISLER

Sunucu Sistemleri Yonetimi Servisi

Test Ortami Servisi

Veri Merkezi Servisleri

Elektrik Sistemleri Yonetimi

Iklimlendirme Sistemleri Yonetim...

Yazilim Gelistirme

Yedekleme Ve Veri Senkronizasyonu

IT Guvenlik

Kimlik Yonetimi Servisi

Web Filtreleme Servisi

Sertifika Servisi

DDOS Servisi

Aciklik Yonetimi Servisi

Merkezi Log Yonetimi Servisi

Firewall Ve VPN Servisi

Reverse Proxy Servisi

Anti Zararli Servisi

Kimlik Dogrulama Servisi

Veri Merkezi Guvenligi Yonetimi

IPS Servisi

Ag Yonetimi

Veri Merkezi Kablo Aktif Ag S...

Kablosuz Aktif Ag Servisleri

Uc Kablo Aktif Ag Servisi

Beraber Calisma Yonetimi

Aninda Mesajlasma Servisi

Intranet Portali Servisi

Felaket Hazirliklari Servisi

Felaket Hazirliklari Servisi

Cihaz Yonetimi Servisi

Kullanici Cihaz Ve Yazilim Dest...

Mobil Cihaz Yonetimi

Ozel Bulut Servisi

Uygulama Izleme Servisi

Sanallastirma Yonetimi

Sunucu Izleme Servisi

Ozel Bulut Servisi Hizmet Pano...

Sanal Internet Erisim Servisi

Yazici Destek Servisi

Sanallastirma Servisi

Istemci Destek Servisi

Sanal Makine Servisi

Barkod Etiketleme Servisi

Sunucu Sistemleri Yonetimi Ser...

Otomasyon Yonetimi

Otomasyon Orkestrasyon Uygul...

Sunucu Otomasyon Uygulamasi

Dis Entegrasyonlar

ITS Servisi

Kizilay Entegrasyonu Servisi

Kan Bankasi Modulu Servisi

Saglik Net Servisi

E Nabiz Servisi

CKYS Servisi

Acil 112 Yatak Sayisi Entegrasyo...

Klinik Karar Entegrasyonu Servi...

Medula Servisi

Dis Laboratuvar Entegrasyonu ...

Teletip Entegrasyonu Servisi

KPS Kimlik Paylasim Sistemi Se...

MKYS Servisi

MHRS Servisi

PBYS Servisi

Felaket Kurtarma Servisi

E Recete Servisi

EVENT BROWSER - KAN\_BANKASI\_MODULU\_SERVISI

Attention: The configured maximum amount of active events that can be displayed has been reached. Only events that were received after 3/27/17 11:00:07 AM are displayed.

Sev	Prio	C	N	I	A	U	D	Sta...	Time Received	Title
×	▲							□	4/25/17 11:46:22 AM	Threshold violation(s) for latency [/hbys-web/r
×	▲							□	4/25/17 11:46:22 AM	Threshold violation(s) for latency [/hbys-web/r
×	▲							□	4/25/17 11:46:22 AM	Threshold violation(s) for latency [/hbys-web/r
×	▲							□	4/25/17 11:45:22 AM	Threshold violation(s) for latency [/hbys-web/r
×	▲							□	4/25/17 11:39:52 AM	Threshold violation(s) for Probe - Long Requ
✓	▼							□	4/25/17 11:38:52 AM	Back to normal: Threshold violation(s) for late
▲	▼							□	4/25/17 11:35:22 AM	Threshold violation(s) for CPUload - CPU (3
✓	▼							□	4/25/17 11:33:52 AM	Back to normal: Threshold violation(s) for late
✓	▼							□	4/25/17 11:13:53 AM	Back to normal: Threshold violation(s) for Pro
✓	▼							□	4/25/17 11:13:53 AM	Back to normal: Threshold violation(s) for Pro
✓	▼							□	4/25/17 11:13:53 AM	Back to normal: Threshold violation(s) for Pro
✓	▼							□	4/25/17 10:36:22 AM	Back to normal: Threshold violation(s) for late
✓	▼							□	4/25/17 10:36:22 AM	Back to normal: Threshold violation(s) for Pro
✓	▼							□	4/25/17 09:09:17 AM	URL Monitor - 200 Metric 'status' changed sta
✓	▼							□	4/25/17 09:08:52 AM	URL Monitor - 200 Metric 'status' changed sta
✓	▼							□	4/25/17 09:08:22 AM	URL Monitor - 200 Metric 'status' changed sta
✓	▼							□	4/25/17 09:08:12 AM	SLA[Onkoloji_Bilgi_Sistemi][HBYS] bileseninc

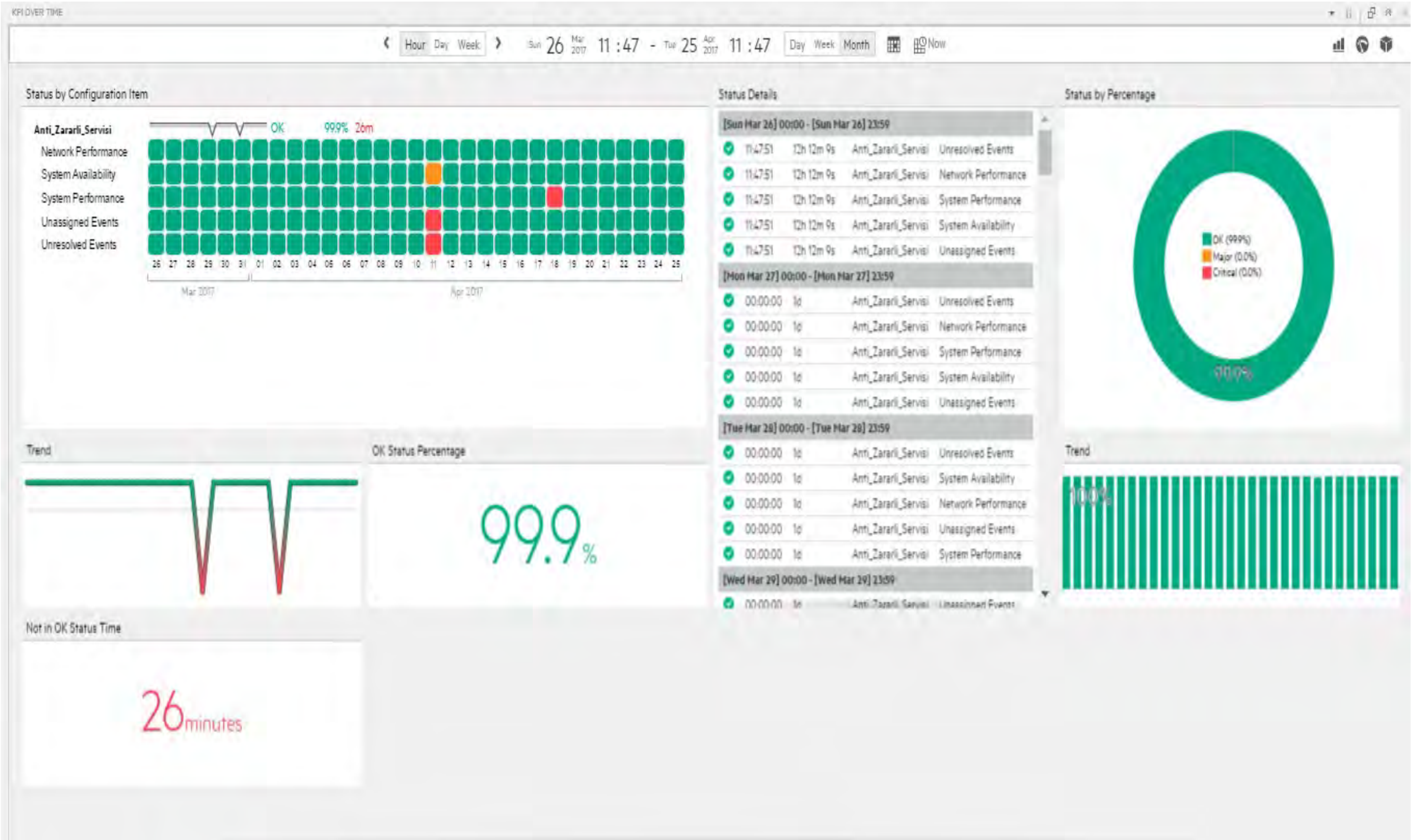
Items: 794 of 8336 (0)

Kan\_Bank 424 9 62 20 279 0 0 0



# IT Infrastructure Monitoring

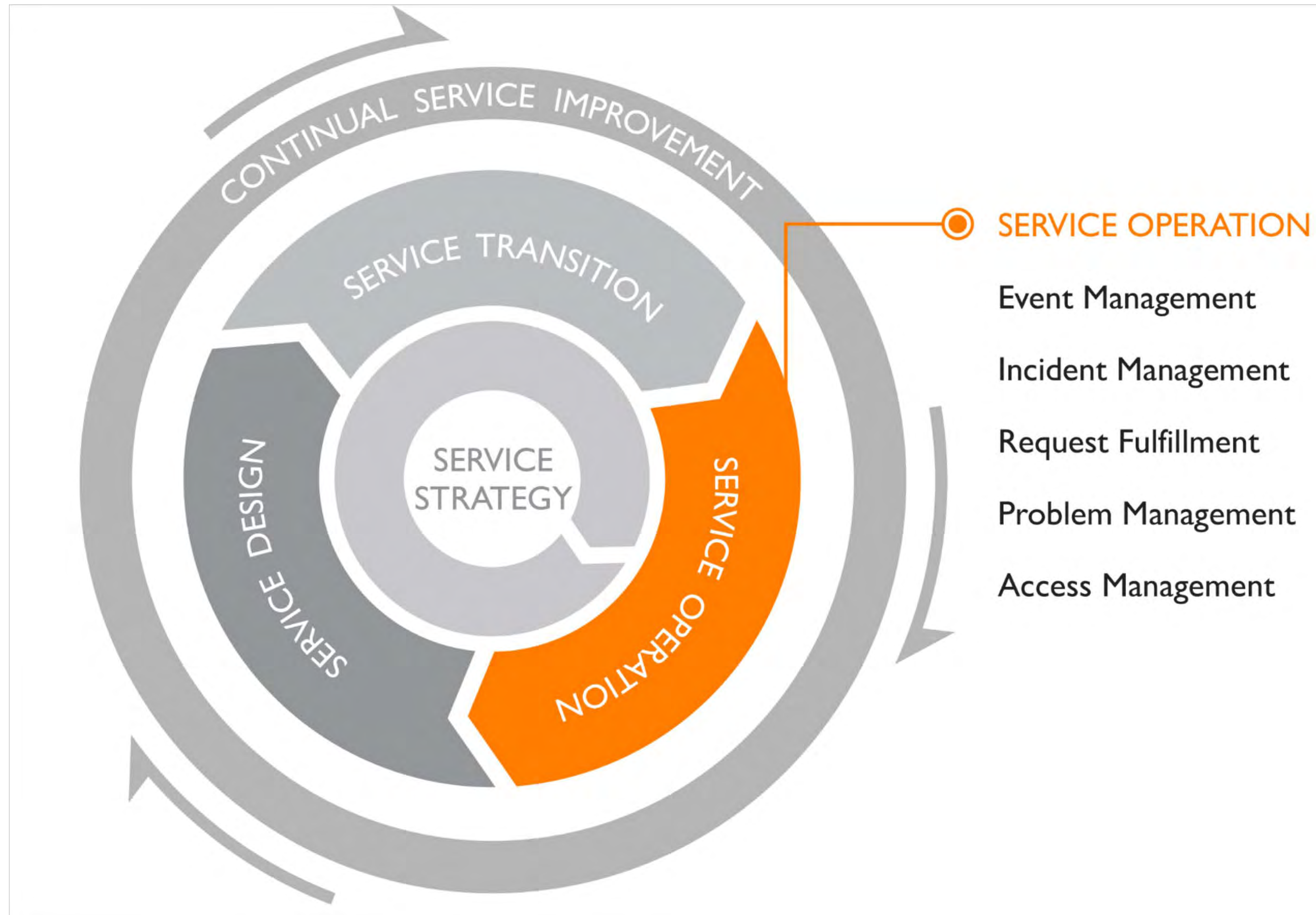
## Network KPI Over Time





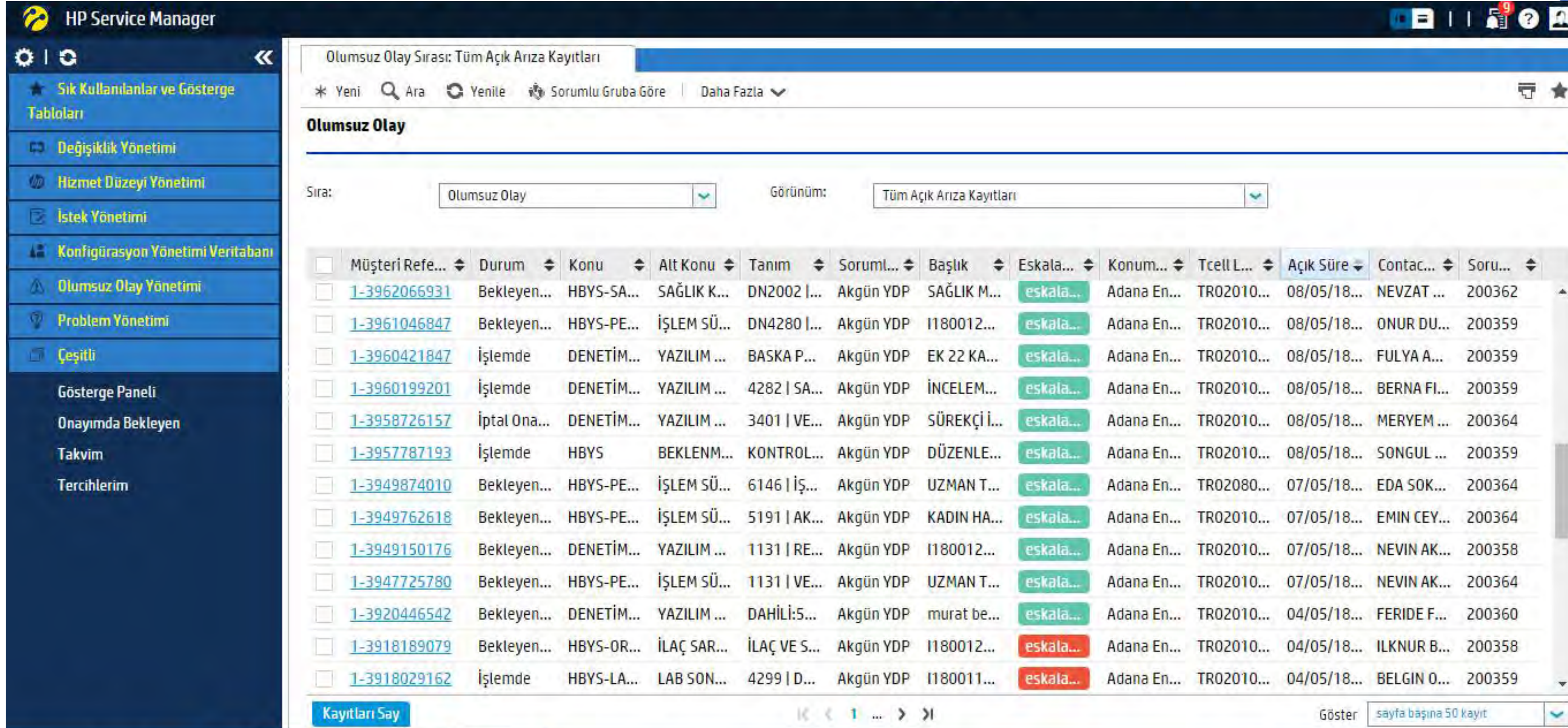
# IT Service Management

ITIL Event / Request / Change Management process implementations with workflow





# SLA Based Operation Management



HP Service Manager

Olumsuz Olay Sırası: Tüm Açık Arıza Kayıtları

\* Yeni Ara Yenile Sorumlu Gruba Göre Daha Fazla

**Olumsuz Olay**

Sıra: Olumsuz Olay Görünüm: Tüm Açık Arıza Kayıtları

Müşteri Refe...	Durum	Konu	Alt Konu	Tanım	Soruml...	Başlık	Eskala...	Konum...	Tcell L...	Açık Süre	Contac...	Soru...
<a href="#">1-3962066931</a>	Bekleyen...	HBYS-SA...	SAĞLIK K...	DN2002  ...	Akgün YDP	SAĞLIK M...	eskala...	Adana En...	TR02010...	08/05/18...	NEVZAT ...	200362
<a href="#">1-3961046847</a>	Bekleyen...	HBYS-PE...	İŞLEM SÜ...	DN4280  ...	Akgün YDP	I180012...	eskala...	Adana En...	TR02010...	08/05/18...	ONUR DU...	200359
<a href="#">1-3960421847</a>	İşlemde	DENETİM...	YAZILIM ...	BASKA P...	Akgün YDP	EK 22 KA...	eskala...	Adana En...	TR02010...	08/05/18...	FULYA A...	200359
<a href="#">1-3960199201</a>	İşlemde	DENETİM...	YAZILIM ...	4282   SA...	Akgün YDP	İNCELEM...	eskala...	Adana En...	TR02010...	08/05/18...	BERNA FI...	200359
<a href="#">1-3958726157</a>	İptal Ona...	DENETİM...	YAZILIM ...	3401   VE...	Akgün YDP	SÜREKÇİ İ...	eskala...	Adana En...	TR02010...	08/05/18...	MERYEM ...	200364
<a href="#">1-3957787193</a>	İşlemde	HBYS	BEKLENM...	KONTROL...	Akgün YDP	DÜZENLE...	eskala...	Adana En...	TR02010...	08/05/18...	SONGUL ...	200359
<a href="#">1-3949874010</a>	Bekleyen...	HBYS-PE...	İŞLEM SÜ...	6146   İŞ...	Akgün YDP	UZMAN T...	eskala...	Adana En...	TR02080...	07/05/18...	EDA SOK...	200364
<a href="#">1-3949762618</a>	Bekleyen...	HBYS-PE...	İŞLEM SÜ...	5191   AK...	Akgün YDP	KADIN HA...	eskala...	Adana En...	TR02010...	07/05/18...	EMIN CEY...	200364
<a href="#">1-3949150176</a>	Bekleyen...	DENETİM...	YAZILIM ...	1131   RE...	Akgün YDP	I180012...	eskala...	Adana En...	TR02010...	07/05/18...	NEVIN AK...	200358
<a href="#">1-3947725780</a>	Bekleyen...	HBYS-PE...	İŞLEM SÜ...	1131   VE...	Akgün YDP	UZMAN T...	eskala...	Adana En...	TR02010...	07/05/18...	NEVIN AK...	200364
<a href="#">1-3920446542</a>	Bekleyen...	DENETİM...	YAZILIM ...	DAHİLİ:5...	Akgün YDP	murat be...	eskala...	Adana En...	TR02010...	04/05/18...	FERIDE F...	200360
<a href="#">1-3918189079</a>	Bekleyen...	HBYS-OR...	İLAÇ SAR...	İLAÇ VE S...	Akgün YDP	I180012...	eskala...	Adana En...	TR02010...	04/05/18...	ILKNUR B...	200358
<a href="#">1-3918029162</a>	İşlemde	HBYS-LA...	LAB SON...	4299   D...	Akgün YDP	I180011...	eskala...	Adana En...	TR02010...	04/05/18...	BELGIN O...	200359

Kayıtları Say

Göster sayfa başına 50 kayıt

- 7/24 Support for tickets
- SLA based operation management
- SLA based performance monitoring&reporting





# End User Support

- **7/24 Onsite support**
- **Experienced technicians**

## **Supported Devices for Yozgat Hospital:**

- 775 PCs
- 65 Tablets
- 222 Printers
- 591 Barcode Writers/Readers
- 26 Kiosks
- 69 LCD Screens
- 310 Access Points
- 130 switches







**THANK YOU**