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Architecture of the monitoring system

```
flowchart TB
  subgraph DataPlane["Data Plane"]
    IPSEC["IPSec ESP IKEv2 SA / Child SA Kernel xfrm"]
    GTPU["GTP-U Tunneller S2b Data ePDG ↔ PGW"]
  end
  subgraph ControlPlane["Control Plane"]
    IKE["IKEv2 SWu EAP-AKA' auth"]
    DIAM["Diameter Client SWx/SWm/S6b"]
    GTPC["GTPv2-C S2b to PGW/SMF"]
    CTRL["ePDG Controller Attach/Detach FSM"]
  end
  subgraph Collection["Metrics Collection"]
    PROMEXP["fast-epdg /metrics endpoint :9817"]
  end
  subgraph Storage["Storage"]
    PROM["Prometheus TSDB 15-day retention"]
  end
  subgraph Visualization["Visualization"]
    GRAF["Grafana 4 дашборда, 35+ панелей"]
  end
  subgraph Alerting["Alerting"]
    AM["Alertmanager Routing / Inhibition"]
    EMAIL["Email SMTP"]
    SNMPGW["SNMP Trap Sender Webhook → Trap gateway"]
    NMS["Внешняя NMS SNMP v2c UDP/162"]
    WH["Webhooks Telegram / PagerDuty"]
  end
  IKE --> PROMEXP
  IPSEC --> PROMEXP
  GTPC --> PROMEXP
  GTPU --> PROMEXP
  DIAM --> PROMEXP
  CTRL --> PROMEXP
  PROMEXP --> PROM
  PROM --> GRAF
  PROM --> AM
  AM --> EMAIL
  AM --> SNMPGW
  AM --> NMS
  AM --> WH
```

Four-level monitoring architecture

Level	Component	Technology
Collection	Built-in /metrics endpoint fast-epdg	Prometheus text format over HTTP
Storage	Prometheus TSDB	Local storage, 15-day storage by default
Visualization	Grafana + JSON support	Autodownload 4 dashboards
Alerting	Alertmanager + SNMP Trap Sender	PromQL rules → webhook → SNMP v2c trap