

SIP3: New generation of VoIP monitoring

SIP3

COMMCON
VIRTUAL 2021



SIP3 Platform is built to help
Mobile Operators / CPaaS / UCaaS / CCaaS /
Business Communications

- resolve customers issues
- keep service uptime
- measure service degradation
- monitor business metrics

Features overview and usage guide

MONITORING

TROUBLESHOOTING

TRACING

Enterprise Edition features further are marked by 

SIP3 experts have been working through all existing RFCs and ITUs to find a perfect combination of 25+ SIP and 15+ RTP/RTCP QoS metrics.

RFC 6076

sip_call_trying_delay

sip_call_setup_time

sip_call_attempts

sip_call_disconnect_time

sip_call_establish_time

sip_call_duration

and 20+ more!

PESQ and POLQA
(ITU-T P.862)

rtp_rtp_r_one_way

rtp_rtp_r_lost_packets

rtp_rtp_r_r_factor

rtp_rtp_r_expected_packets

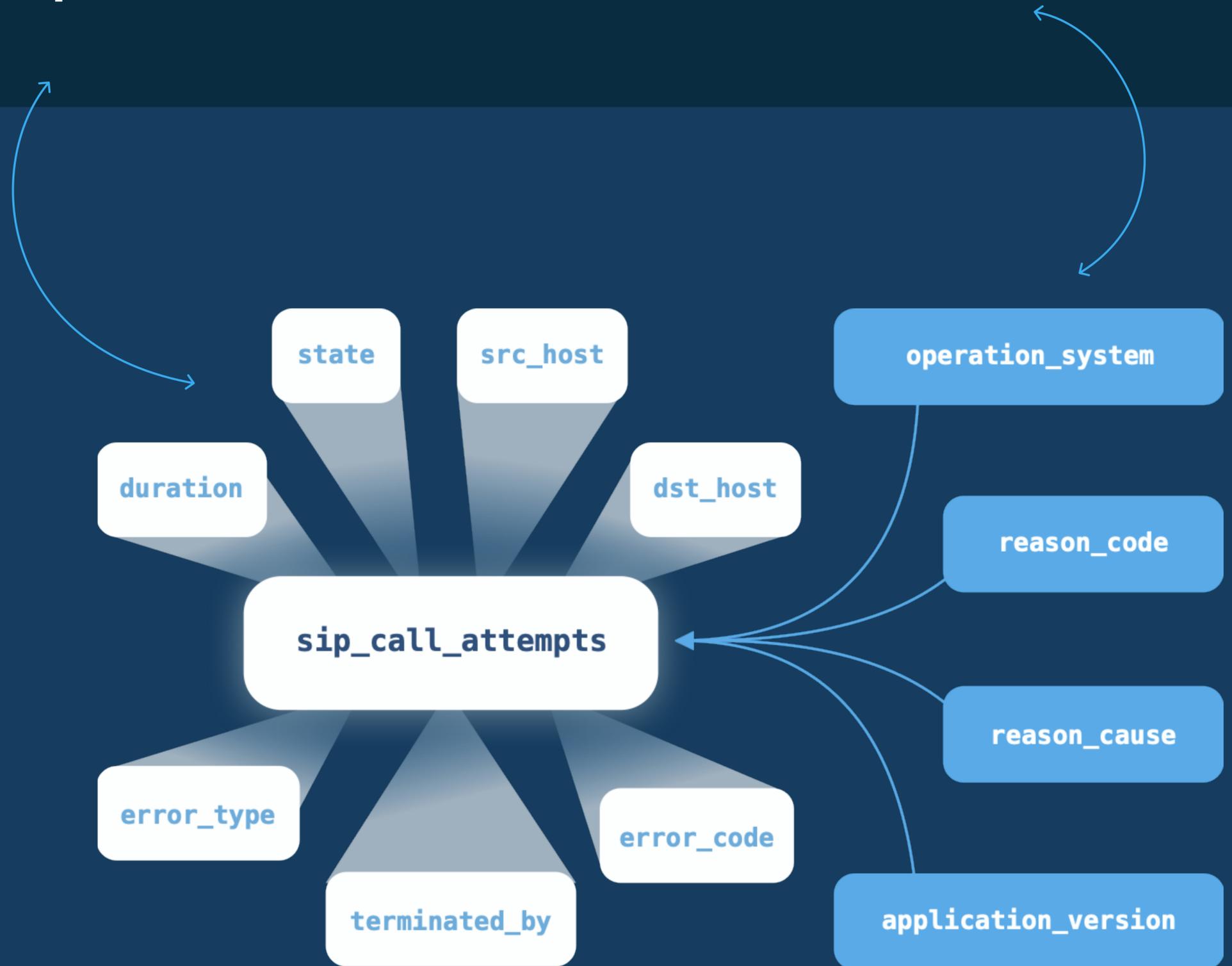
rtp_rtp_r_rejected_packets

rtp_rtp_r_mos

and 10+ more!

Explore each of SIP3 multi-dimensional metrics from different perspectives

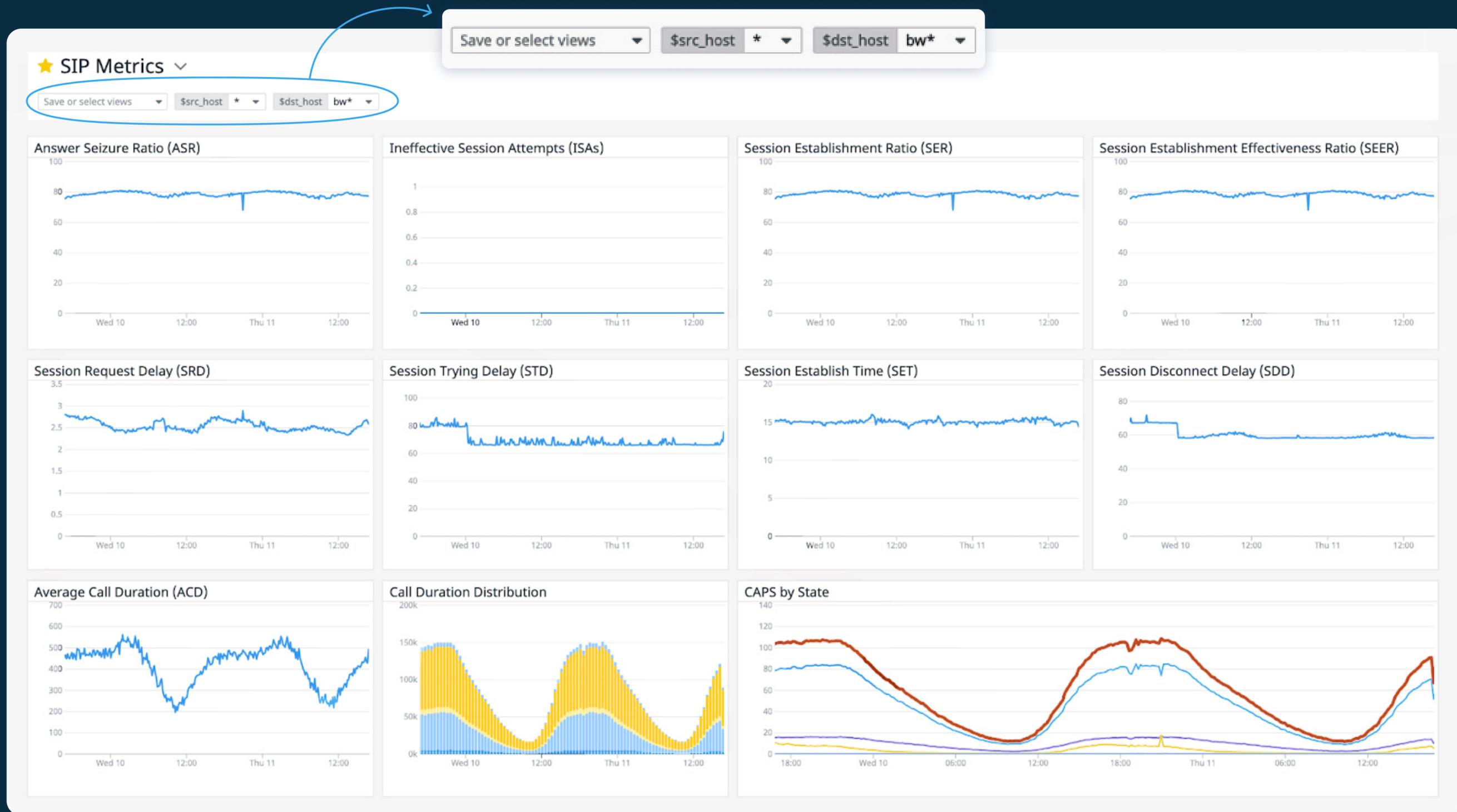
Add user-defined tags and dimensions



Integrate SIP3 metrics into your company's monitoring platform



Start using default QoS dashboards designed by the SIP3 team



Build custom dashboards to perfectly suit your business needs

★ Voicemails: Business Research ▾

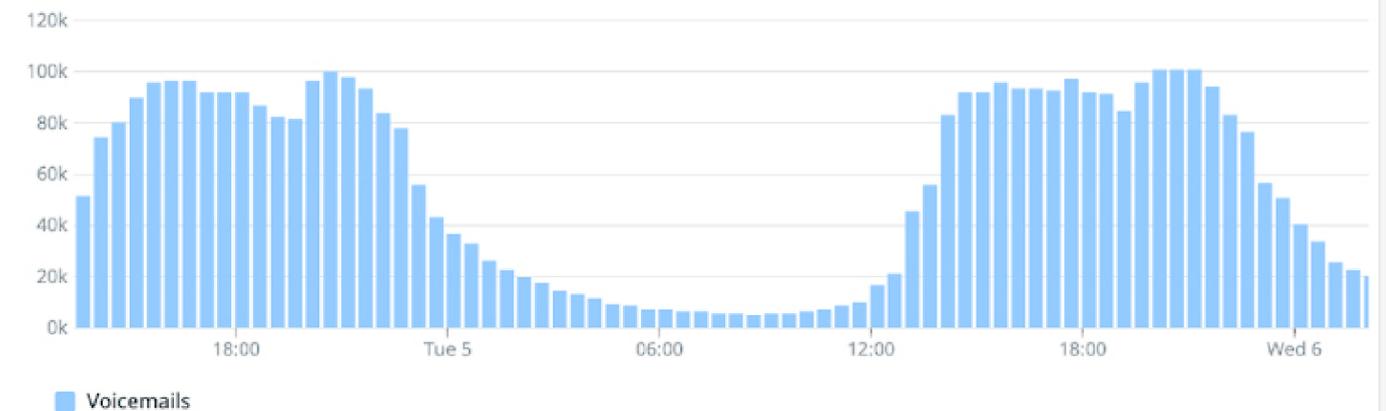
Voicemails: Current ratio

37.5

Voicemails: Current amount

4.09M

Voicemails: Current amount of voicemails



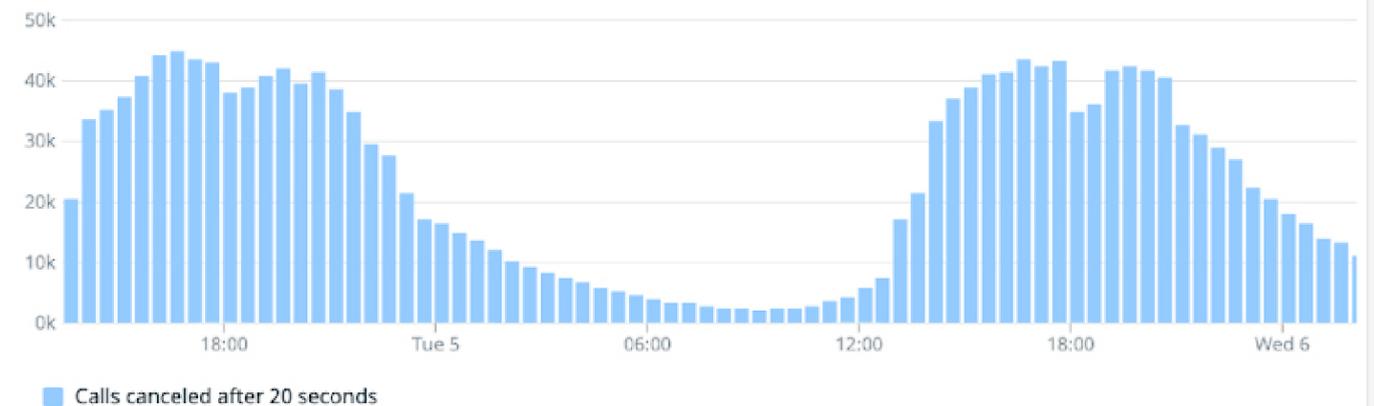
Voicemails: Possible ratio

53.5

Voicemails: Possible amount

5.84M

Voicemails: Amount of calls canceled after 20 seconds because default voicemail timer is too big



Configure meaningful monitoring alerts

Trunk `{{dst_host.name}}` has lots of calls with setup time more than `{{eval "int(threshold)"}}` seconds

Go to SIP3 UI and check what's happening:

```
https://demo.sip3.io/advanced?created_at={{eval  
"last_triggered_at_epoch-15*60*1000"}}&terminated_at={{eval  
"last_triggered_at_epoch+15*60*1000"}}  
&query=sip.setup_time%3E{{eval  
"int(threshold*1000)"}}%20sip.dst_host={{dst_host.name}}
```

Responsible team members:

@agafox@sip3.io



[Triggered] Trunk `██████████` has lots of calls with setup time more than 15 seconds.

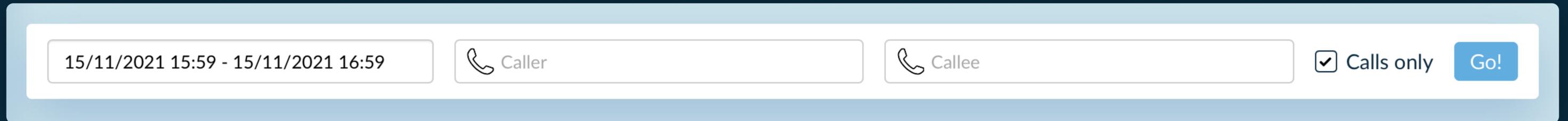
Go to the SIP3 UI and check what's happening:

```
https://demo.sip3.io/advanced?created_at=163242  
0772000&terminated_at=1632422572000&query=sip.setup  
_time%3E15000%20sip.dst_host=██████████
```

Responsible team members: @agafox@sip3.io

Use Simple Search: troubleshoot customers tickets

Perfect for L1/L2 support teams



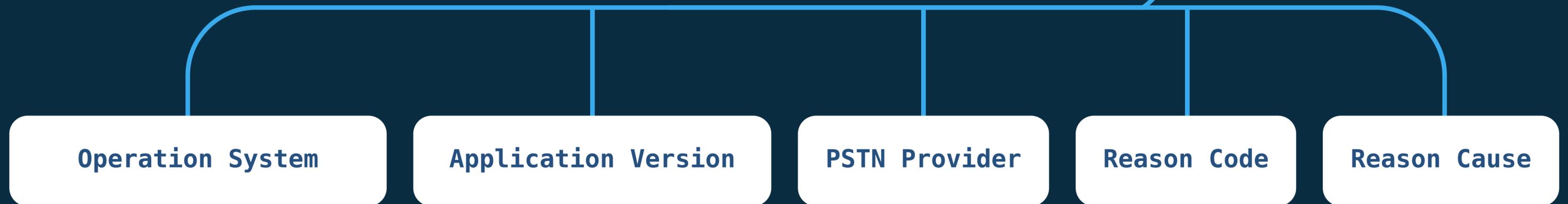
A screenshot of a search interface for customer tickets. The interface is contained within a light blue rounded rectangle. It features a date range input field on the left containing "15/11/2021 15:59 - 15/11/2021 16:59". To its right are two search filters: "Caller" and "Callee", each with a telephone handset icon. Further right is a checkbox labeled "Calls only" which is checked. On the far right is a blue button labeled "Go!".

- Decrease average resolution time
- Educate L1/L2 support teams
- Resolve 95% of all problems

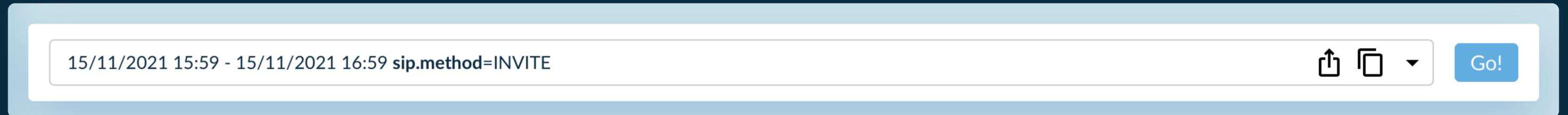
Configure Simple Search for any L1/L2 search scenario



15/11/2021 15:59 - 15/11/2021 16:59 Calls only



Use Advanced Search to troubleshoot monitoring alerts or just explore your VoIP network



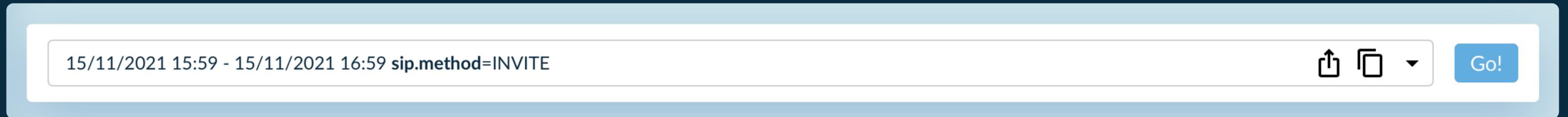
15/11/2021 15:59 - 15/11/2021 16:59 sip.method=INVITE

Go!

Rich syntax:

- 3 main search groupings: sip, rtcp and rtp
- 5 main operators: =, !=, =~, <, >
- 40+ default search attributes

Advanced Search provides incredibly detailed search filtering in minimalistic interface inspired by Wireshark



Just a few examples of what you can put as a search query:

- `sip.caller=plami rtp.r_factor<30`
- `sip.trying_delay>150`
- `sip.retransmits>5`

Extend Advanced Search and introduce search attributes important for your business

15/11/2021 15:59 - 15/11/2021 16:59 sip.robocall=true| 🔗 📄 ▼ Go!

```
package udf

def eventBus = vertx.eventBus()
eventBus.localConsumer("sip_message_udf", { event ->
  def packet = event.body()

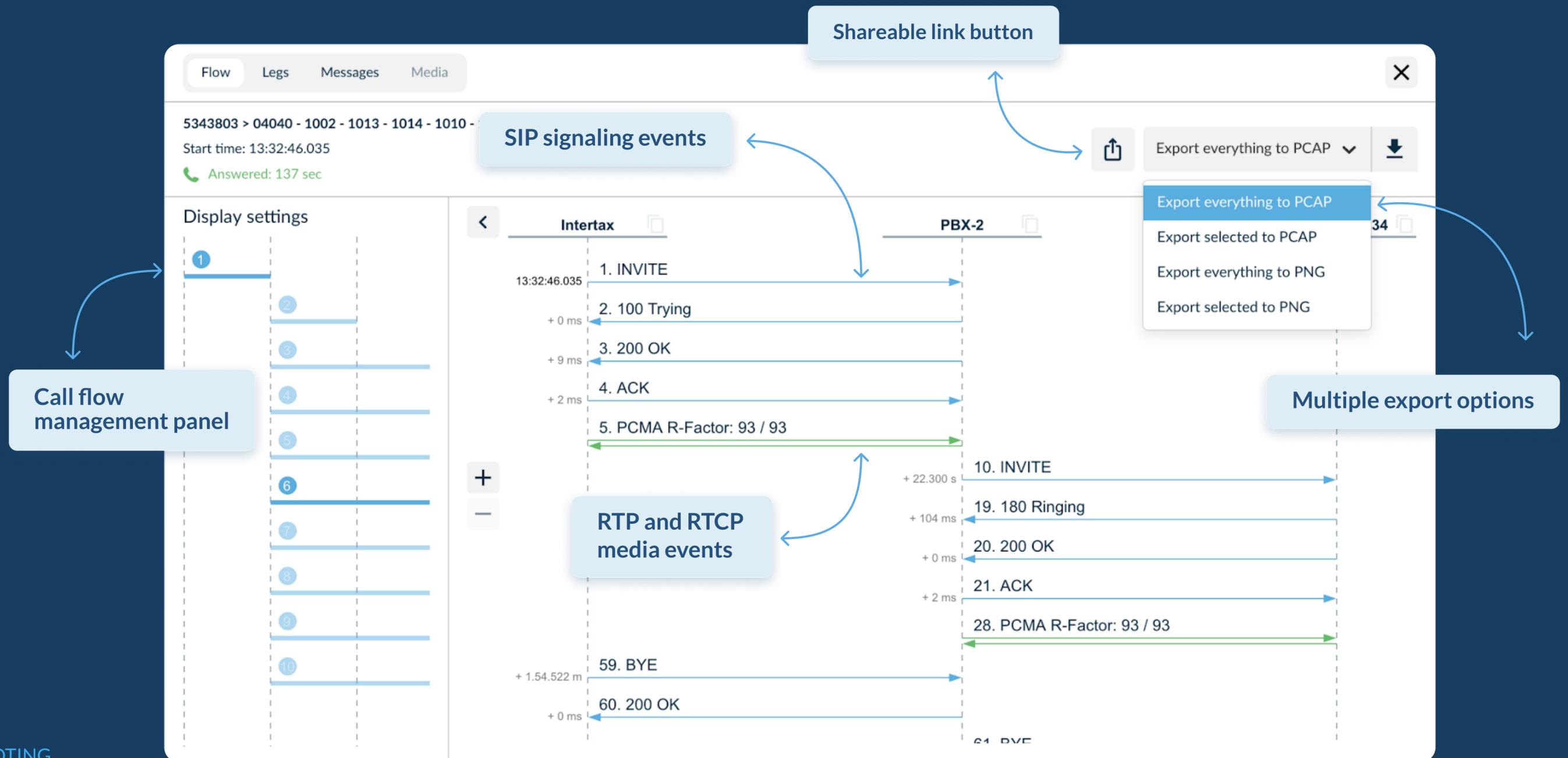
  def sip_message = packet['payload']
  if (sip_message['from'].matches('< sip:100@.*')) {
    packet['attributes']['robocall'] = true
  }

  event.reply(true)
})
```

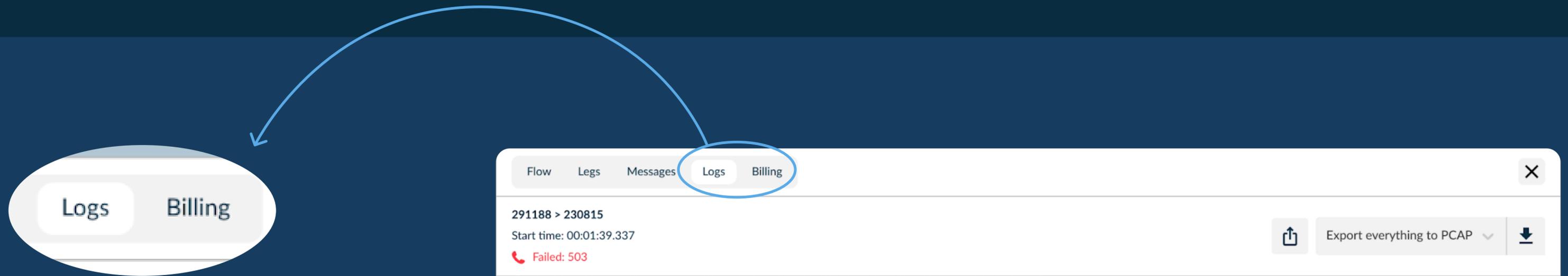
sip_robocall



See all the signaling and media call legs correlated in a handy flow diagram



Pull additional data into separate call information tabs



- Application logs
 - CDRs
 - Billing details
- and many more

Flow Legs Messages **Logs** Billing

291188 > 230815

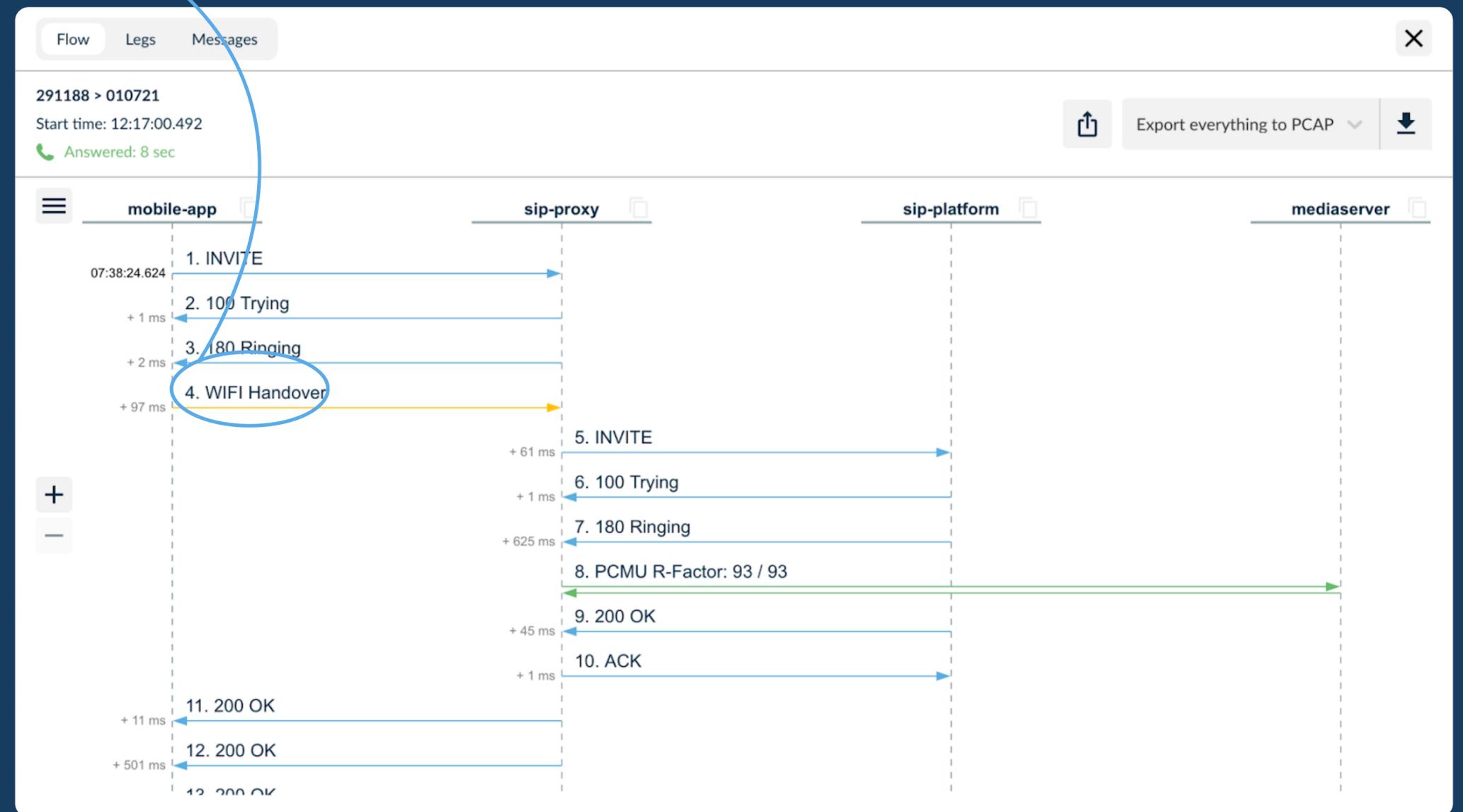
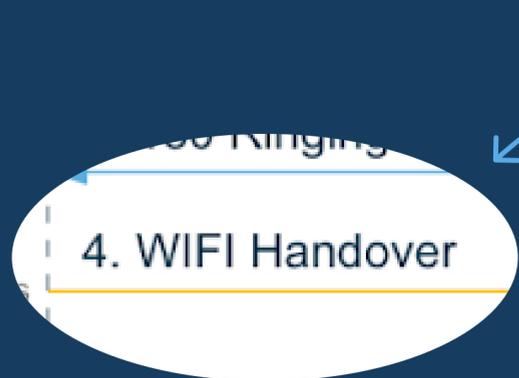
Start time: 00:01:39.337

Failed: 503

Export everything to PCAP

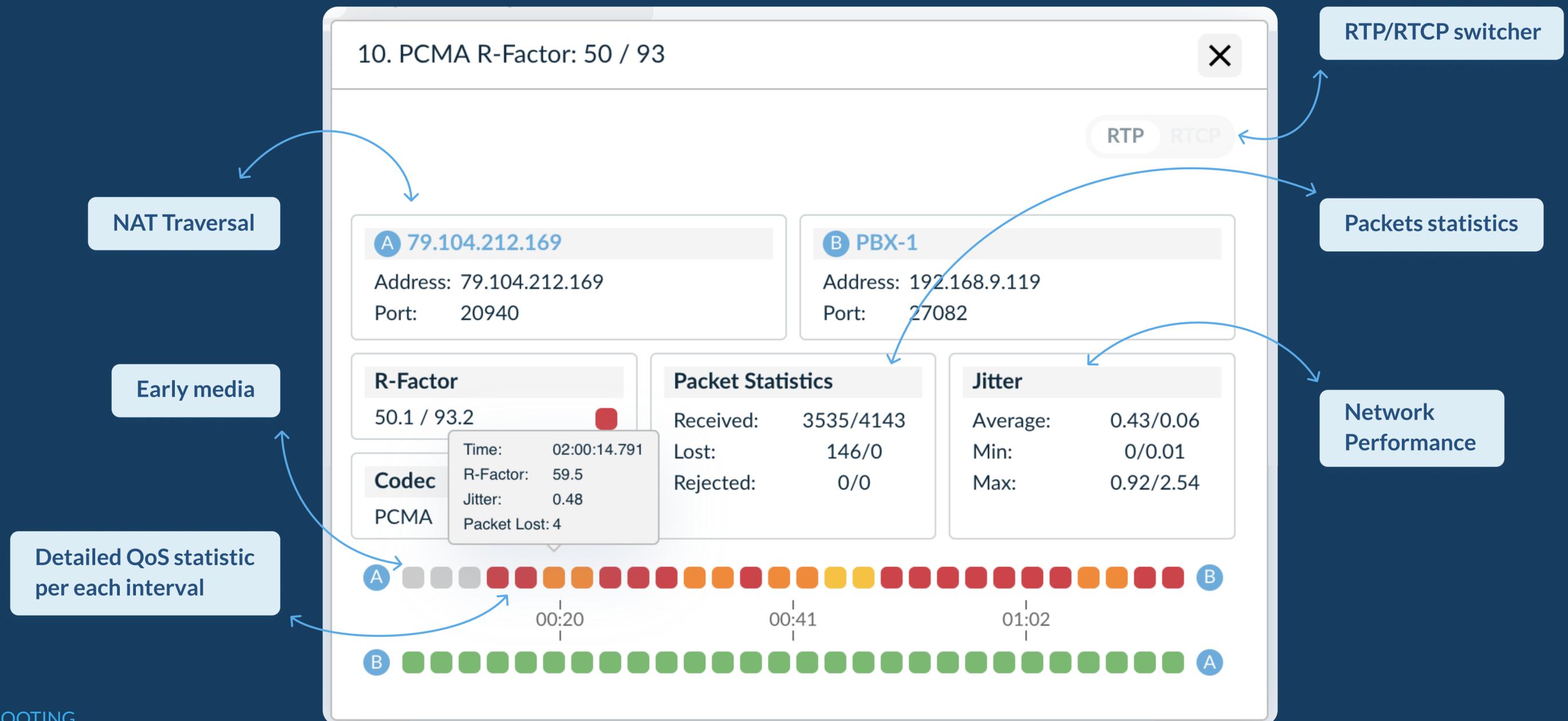
[Detailed call logs content]

Or even push extra data events to the flow diagram



- CAMEL messages
- Wifi to LTE handovers
- DTMF events
- Push Notification events
- and many more

Get really deep insights on media quality



Trace complex media quality issues



```
recording:
  enabled: true
  filters:
    - filter: "sip.src_addr=26.03.19.93 sip.user=desi"
      mode : 0
    - filter: "rtp.host=RTP_ENGINE_1 rtp.duration>10000 rtp.r_factor<75"
      mode : 1
```

Disk space economy
comparing to .pcap files:

FULL MODE: 30%

GDPR MODE: 80%

TRACING

```
Real-Time Transport Protocol
[Stream setup by SDP (frame 5)]
10.. .... = Version: RFC 1889 Version (2)
..0. .... = Padding: False
...0 .... = Extension: False
.... 0000 = Contributing source identifiers count: 0
0... .... = Marker: False
Payload type: ITU-T G.711 PCMU (0)
Sequence number: 21375
[Extended sequence number: 21375]
Timestamp: 4202209063
Synchronization Source identifier: 0x4fd221dd
(1339171293)
```

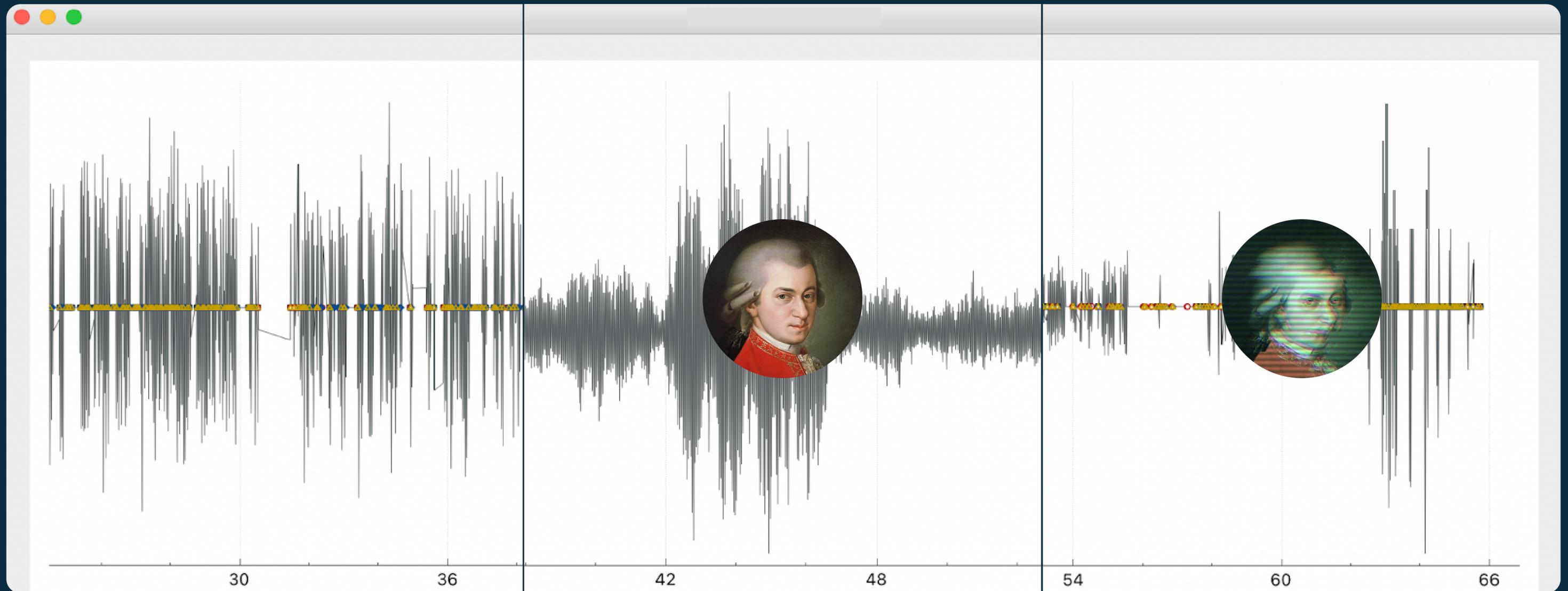
SRTCP Encrypted Payload:

```
e7e4e3e4e4e4e5e5ebf6786d696c747a7b756e6b69696765e7e4
e3e4e4e4e5e5ebf6786d696c747a7b756e6b69696765e7e4e3e4
e4e4e5e5ebf6786d696c747a7b756e6b69696765e7e4e3e4e4e4
e5e5ebf6786d696c747a7b756e6b69696765e7e4e3e4e4e4e5e5
```

GDPR

FULL

Ask Mozart to protect your data privacy



 SIP3 records a call...

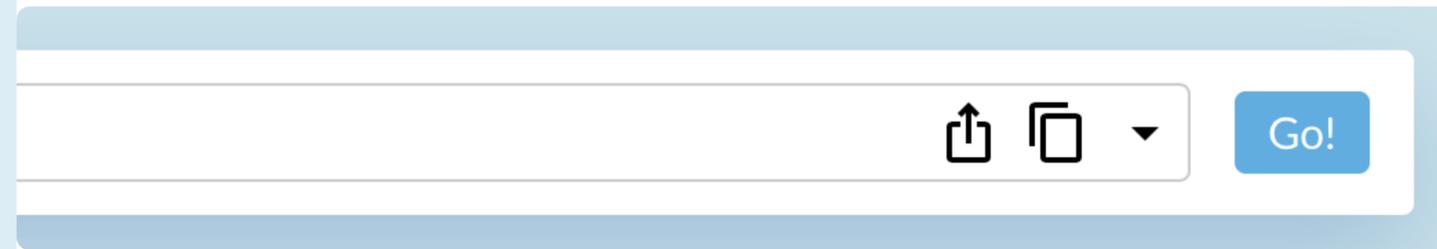
 Takes a properly encoded Mozart melody...

Replaces a real human conversation with the melody but keep original call user experience

Share all your findings with your teammates or interconnection partners

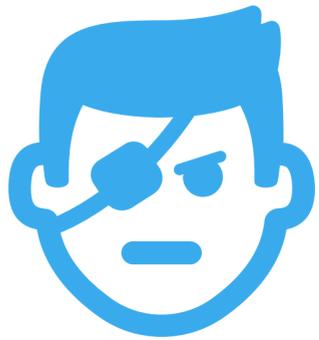


**Full or partial
.pcap files**
offline



**Link to a particular call or many
calls through Advanced Search**
online

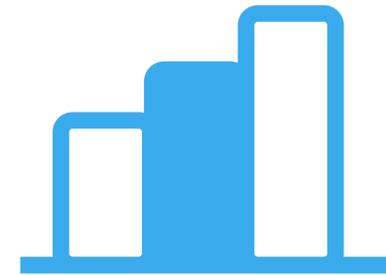
Build SIP3 Solutions to get an additional value of using the SIP3 platform



**Fraud
detection**



**Conditional
routing**



**Business
analytics**



**Predictive
dialing**

and more!

Thank you for listening!

Get in touch:
github.com/sip3io

Visit us:
sip3.io