

# What's up with IMS & VoLTE?

Carsten Bock - KamailioWorld 2018

# Today's Agenda

- Status update: Another year over - what happened?

## What's up?

- Updated HSS for IMS
- IPSec - connecting using Wifi (VoWifi)
- Solving the “Handset issue”

# Status update

## Status update

- We found several “commercial IMS” solutions, which are in fact based on Kamailio
  - It’s hard to prove
  - No way to sue or accuse them based on rumours
- On the other hand:

Proves that Kamailio IMS works!

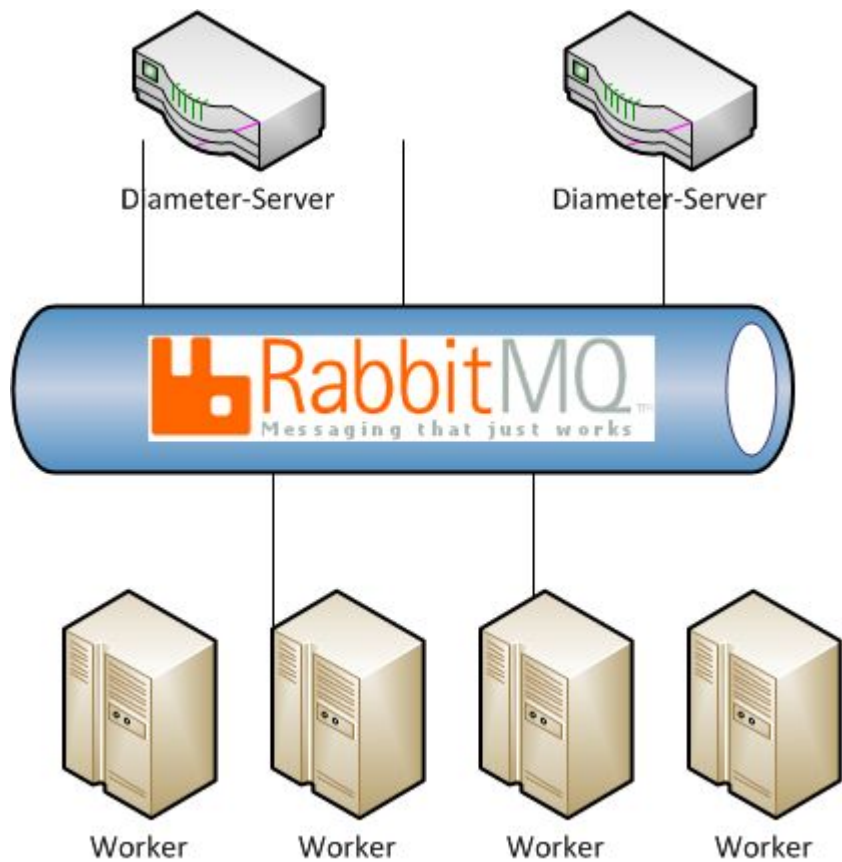
## Status Update (2)

- A lot of changes ongoing “under the hood”
- A lot of new integrations
- SCTP support added to the Diameter-Stack
  - some PCRF’s make SCTP mandatory
- Alignment of Rx with 3GPP 29.214
  - make some more PCRF’s happy
- Some improvements, if the EPC is behind NAT (Lab’s)

# The updated HSS

## Looking back

- Initially we used the OpenHSS from Fraunhofer
  - This works, but it's not the fastest solution
- Later we replaced it with Jboss / Mobicents / JDiameter
  - This was much faster
  - Install and forget, don't touch the system
  - Never open-source, it had too many „Todos“ and “ugly hacks”



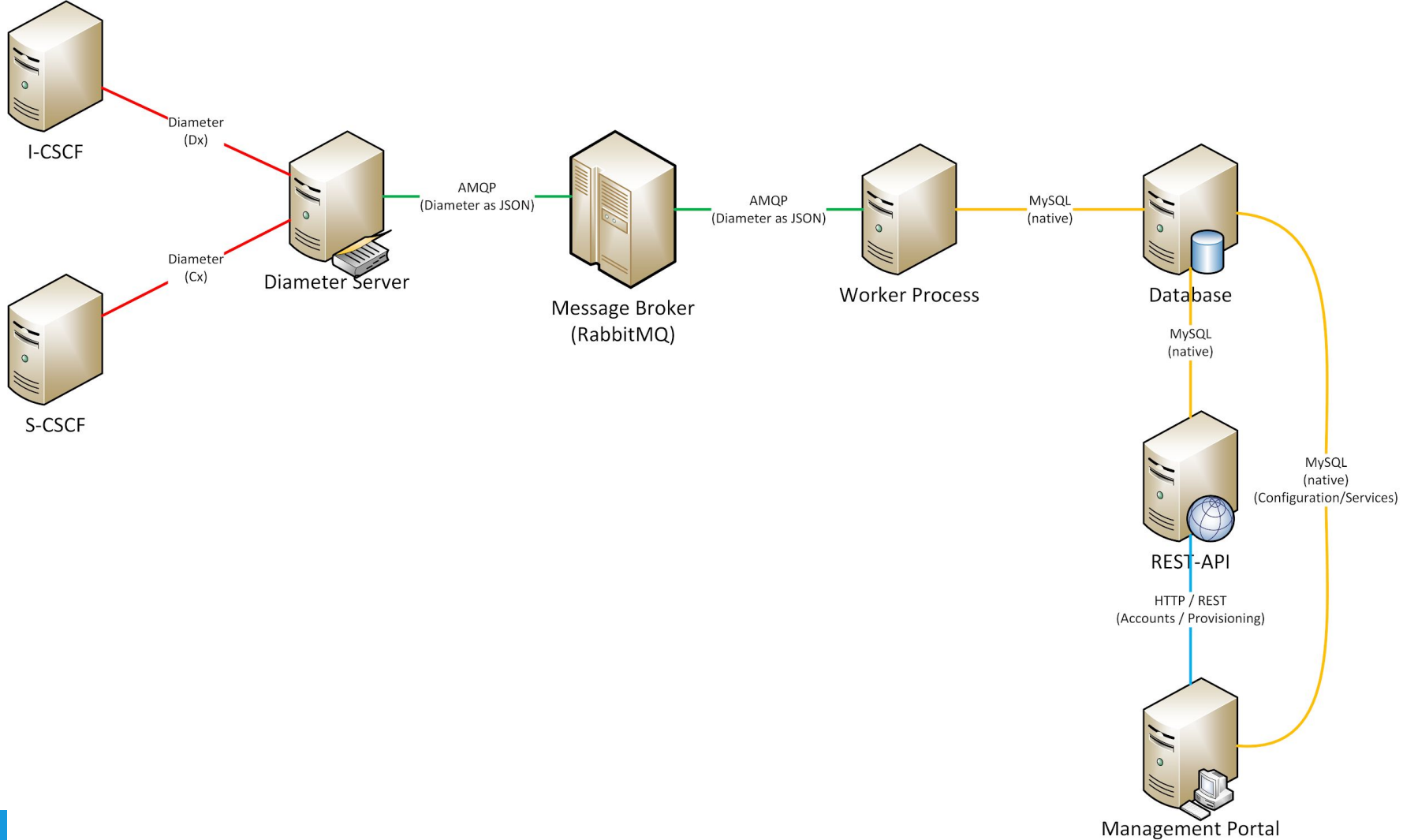
## Implementation:

- Diameter: Kamailio
- Worker: PHP

## Achievements:

- Performance: Up 10x
- Easily Extendable
- Easily Scalable





# Finally on GitHub:

Management UI:

<https://github.com/ngvoice/management-ui>

REST-API & RabbitMQ worker:

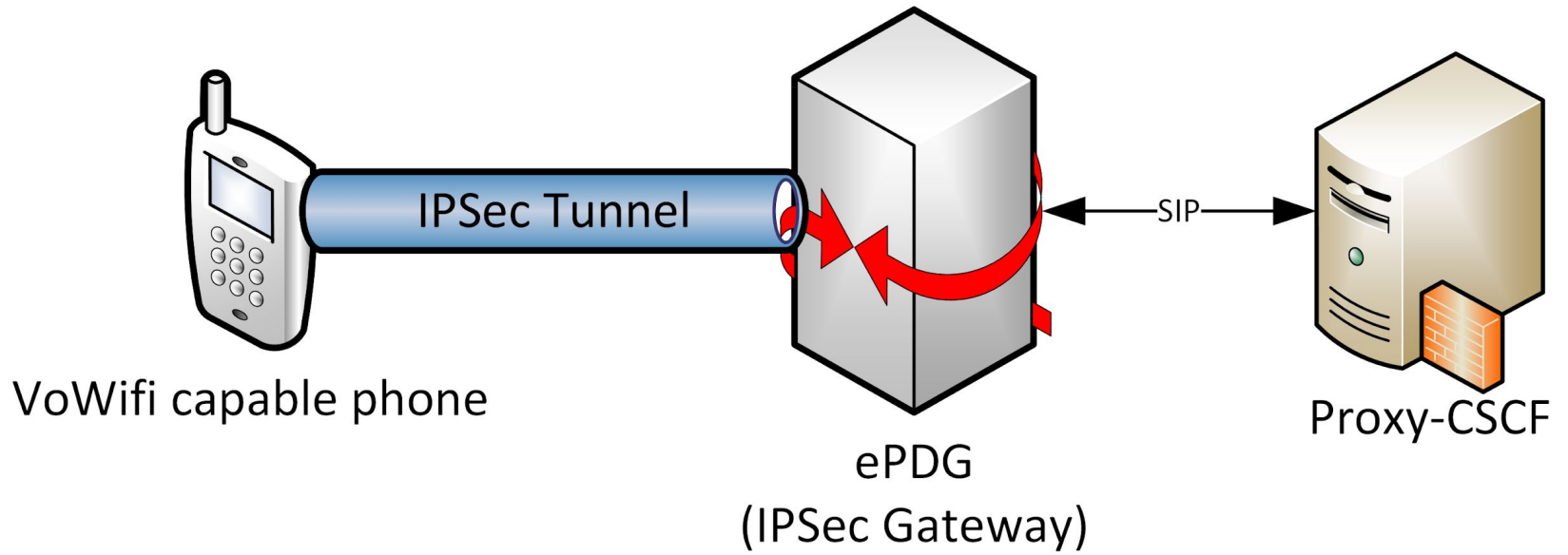
<https://github.com/ngvoice/rest-api>



# IPSec - going for VoWifi

# Why do YOU want VoWifi?

- you keep using the same phonenumber
- you get the same services on Wifi as on LTE
- you get the same user-experience on Wifi as on LTE
- you can extend network coverage to other areas
  - cellars
  - in-house coverage
  - while roaming abroad
  - ...



## IPSec in Kamailio

- Upcoming “ims\_ipsec\_pcscf” module
- utilizes the IPSec Linux kernel implementation
- Key Exchange is done using SIP during REGISTER

Things, you shouldn't expect (at least initially):

- Seamless handover between LTE and Wifi, as this requires some integration with the PGW of the LTE



The IPSec module is  
implemented by

**Tsvetomir Dimitrov**



# Solving the “handset issue”



## Status quo: Handsets

- The manufacturers have to add your network to their list of “known networks”
- Getting onto that list takes time - a lot of time
  - or a serious commitment on purchasing handsets
- You have to talk to every handset manufacturer

Personal Opinion:

**VoLTE should be enabled by default!!!**



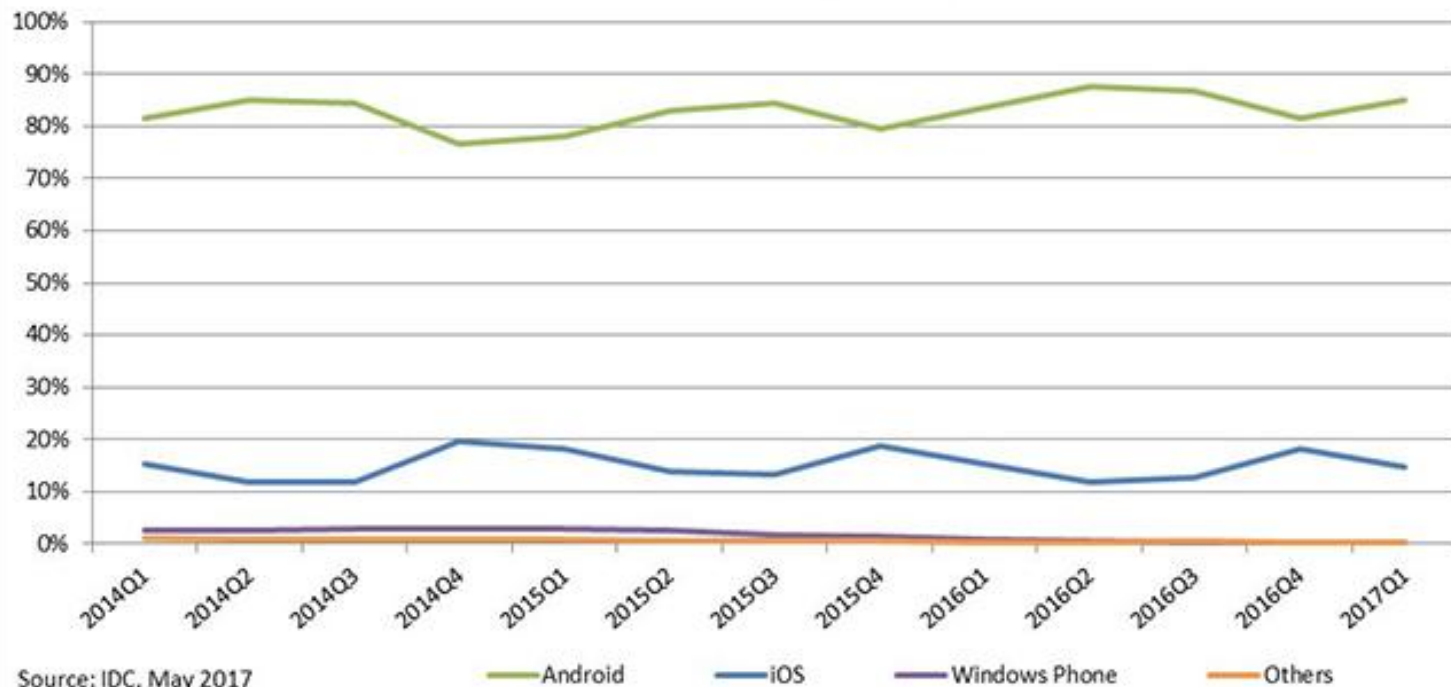
## GSMA Device Settings Database

- should enable VoLTE for Open Market Handsets

### Status

- Implemented on the iPhone 6 and up
- Implemented on 5-10% of the Android devices

## Worldwide Smartphone OS Market Share (Share in Unit Shipments)



Source: IDC, May 2017

— Android — iOS — Windows Phone — Others



The SIM is the key:

- gives your app “Carrier-Privileges”
- allows you to override settings on the phone



[www.ng-voice.com](http://www.ng-voice.com)