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Smart Agent QoE tool®

Overview

Smart Agent QoE collects on large scale anonymous information about the quality of user experience. It's a crowdsourcing solution that collects technical data in *passive mode* from the user phone, analyzing and presenting it back in the form of metrics and KPIs to give the operator a better understanding of subscriber experience.

Customer BASE

Smart Agent QoE has a highly scalable architecture and is specially designed to handle thousands of "measurement probes". It helps to monitor the subscriber traffic and to identify potential geographical areas that may require tuning or expansion and provides input to marketing departments.

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What data and how often

Services	How to make data collection	Details	Events/KPI
Network layer measurement (2G/3G/4G/5G)	Trigger: 1 samples every 15 min (minimum sampling).	– Min Accurancy = [0 – 100] meters – Min Battery = until 10% – Optimizations for same positioning	Network parameters as signal and quality levels, CID, technology identification and position.
Applications throughput	Trigger: switches Off/On of display	– App performance evaluation when Smartphone display is switched on – Min data session duration = 2 sec – Min data session thrput = 16 kbps – Min Battery = until 10%	Technology, Band, CID, RNC, LAC, EnodeB, TAC, total bytes transferred per hour per AppPackage
Wi-Fi measurement	Trigger: 1 samples every 15 min (if smartphone is connected to Wi-Fi)	– Recurring Monitoring of Wi-Fi technology – Same conditions of "Network layer measurement (2G/3G/4G/5G)"	BSSID, SSID, Frequency, Channel, Bandwidth, RSSI, Link Speed, ISP, IP Public, Country ISP and position.
Out of Services (OoS) / Emergency Call (EC)	Trigger: No service	– Recurring Monitoring of OoS/ EC – Min Battery = until 10% – Min Accurancy = [0 – 1000] meters – Optimizations for same positioning	SIM Operator and Position
2G/3G/4G/5G/Wi-Fi connectivity	Trigger: continuous monitoring	Recurring Monitoring of Network Technologies status	Residence Time in 2G/3G/4G/5G/Wi-Fi
Call evaluation	Trigger: Call incoming and outgoing	Recurring Monitoring of Call status	Network parameters as signal level, CID, technology identification and position, Call Setup Time

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Heatmap and Measurements

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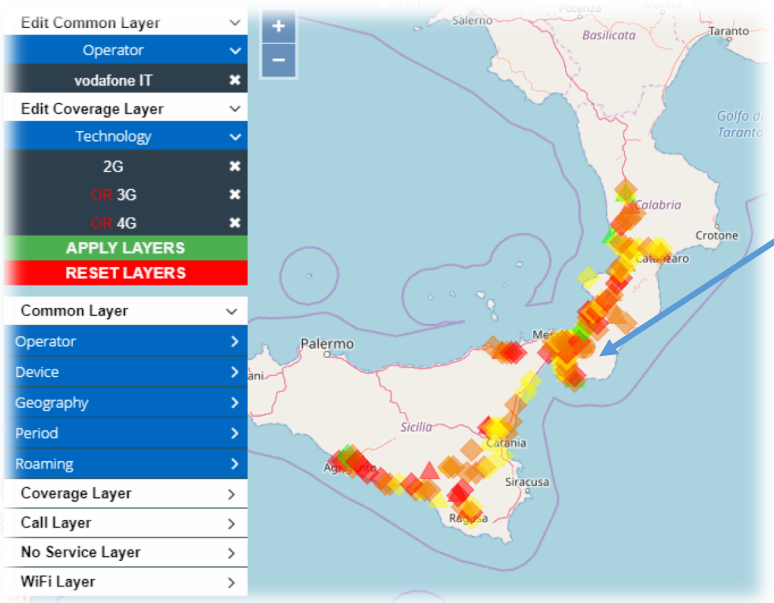
Thresholds Control

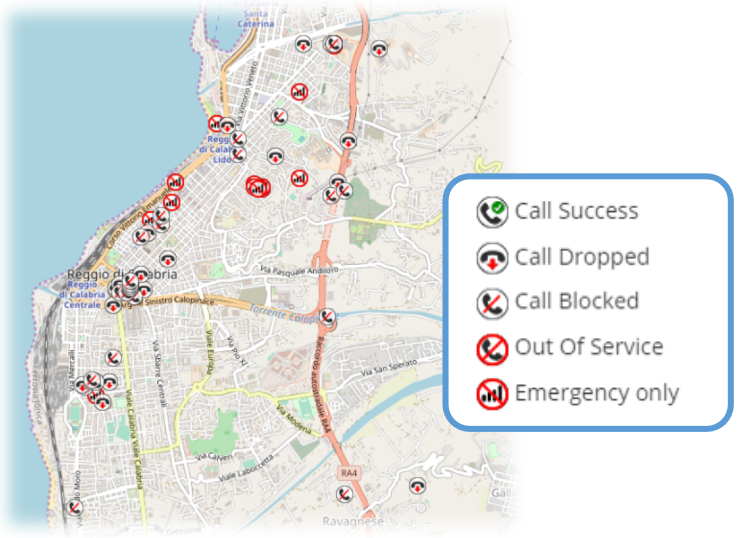
Key Indicators

GSM RxLevel [dBm]
- Da -110 a -100
- Da -100 a -88
- Da -88 a - 70
- Da -70 a -47

UMTS RSCP [dBm]
- Da -120 a -100
- Da -100 a -89
- Da -89 a -65
- Da - 65 a -25

LTE RSRP [dBm]
- Da - 140 a -108
- Da -108 a -95
- Da -95 a -76
- Da -76 a -44





Call Success
Call Dropped
Call Blocked
Out Of Service
Emergency only

Cluster Details

Average Signal 3G: -85 [dBm]
Average Signal 4G: -100 [dBm]

EXPORT

show 10 entries

Data	Device	Signal [dBm]	Band	Tecnology
2018-09-09 13:18:10.000	SM-G960F	-118	800_DD	4G
2018-09-21 12:49:56.000	SM-G960F	-102	1800	4G
2018-09-21 14:46:53.000	SM-G960F	-119	800_DD	4G
2018-09-21 15:04:11.000	SM-G960F	-92	2100	3G
2018-09-21 15:17:51.000	SM-G960F	-72	2100	3G
2018-10-07 10:26:26.000	SM-G960F	-109	800_DD	4G
2018-10-07 13:59:07.000	SM-G960F	-85	800_DD	4G
2018-10-07 14:14:25.000	SM-G960F	-103	800_DD	4G
2018-10-07 14:26:38.000	SM-G960F	-85	800_DD	4G
2018-10-07 14:41:37.000	SM-G960F	-108	1800	4G

Single Measurement Details

DEVICE

Model: SM-G960F
Build: R16NW.G960FXXS2BRI1

NETWORK

Date: 2018-09-21 14:46:53.000
Operator: vodafone IT
MCC: 222
Cid: 12
Technology: 4G
Lte Pci: 379
Lte Rsrp: -119 [dBm]
Lte Snr: -3

Roaming: No
Sim operator: Vodafone (Italy)
MNC: 10
Band: 800_DD
Tac: 42064
Lte Enb: 88354
Lte Rsrq: -13 [dB]

Country: Italia
Province: RC
Latitude: 38.39347660
Speed: 0.01 [Km/h]
Accuracy: 10.0 [m]

Region: Calabria
City: Rizziconi
Longitude: 15.94052280
Altitude: 123.96 [m]

NEIGHBOURS

Band	PCI	Avg-RSRP [dBm]	Avg-RSRQ [dB]
800_DD	226	-124	-18

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Statistics

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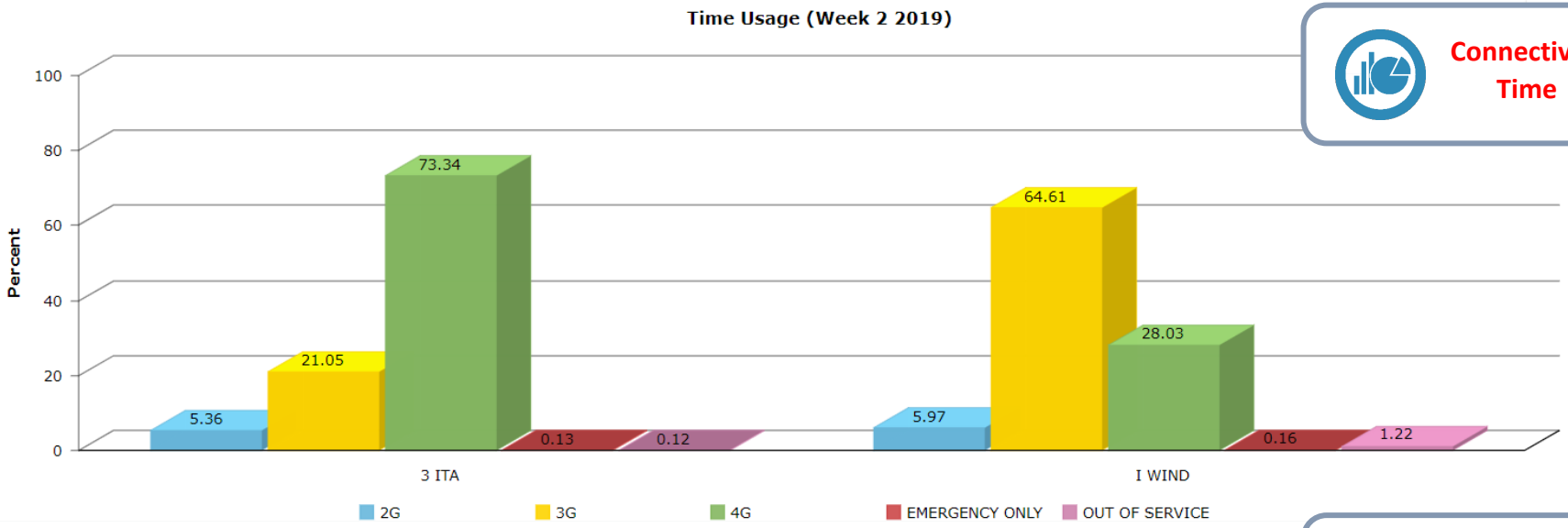
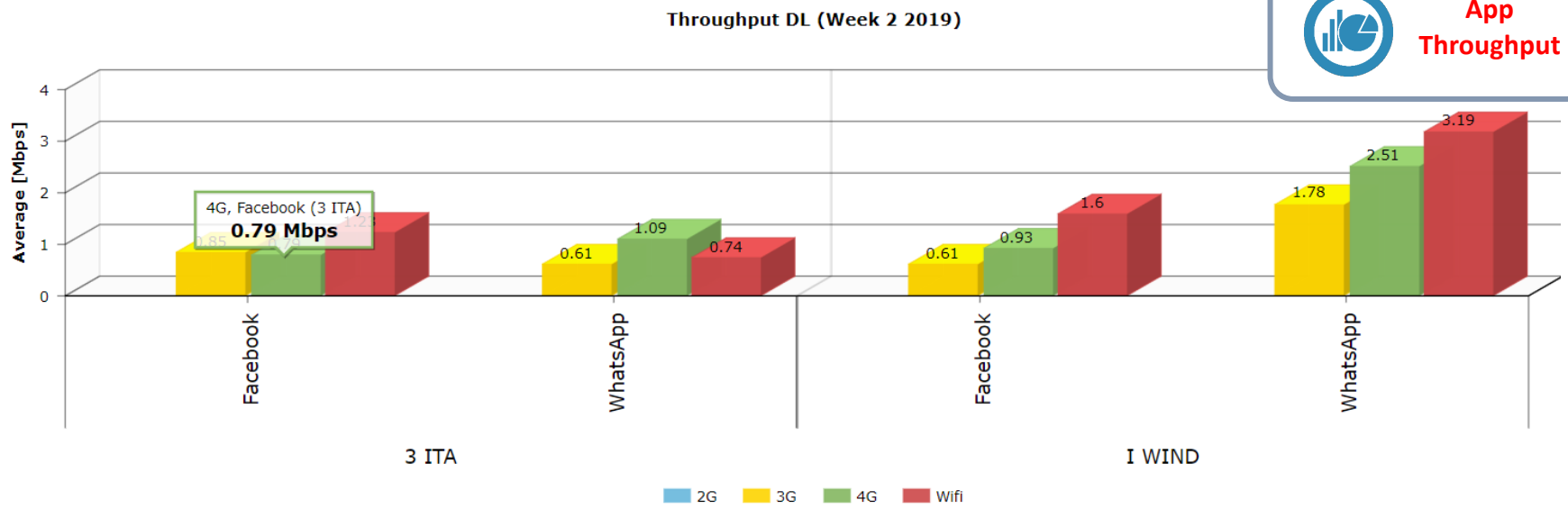
Connectivity Time



App Throughput



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Statistics

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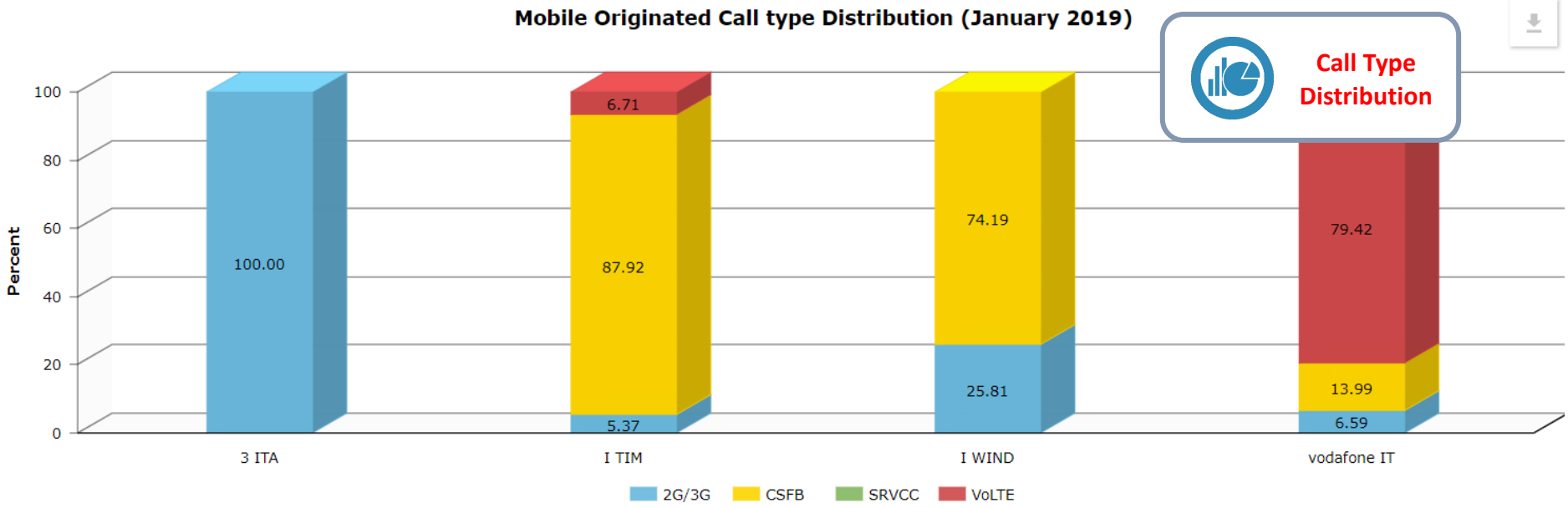

Call Type Distribution

Estimated Dropped Calls

Call Setup Time

Call Re-Initiation Ratio

Call Re-Establishment Ratio

Signal Strength Distribution

Voice Usage for User

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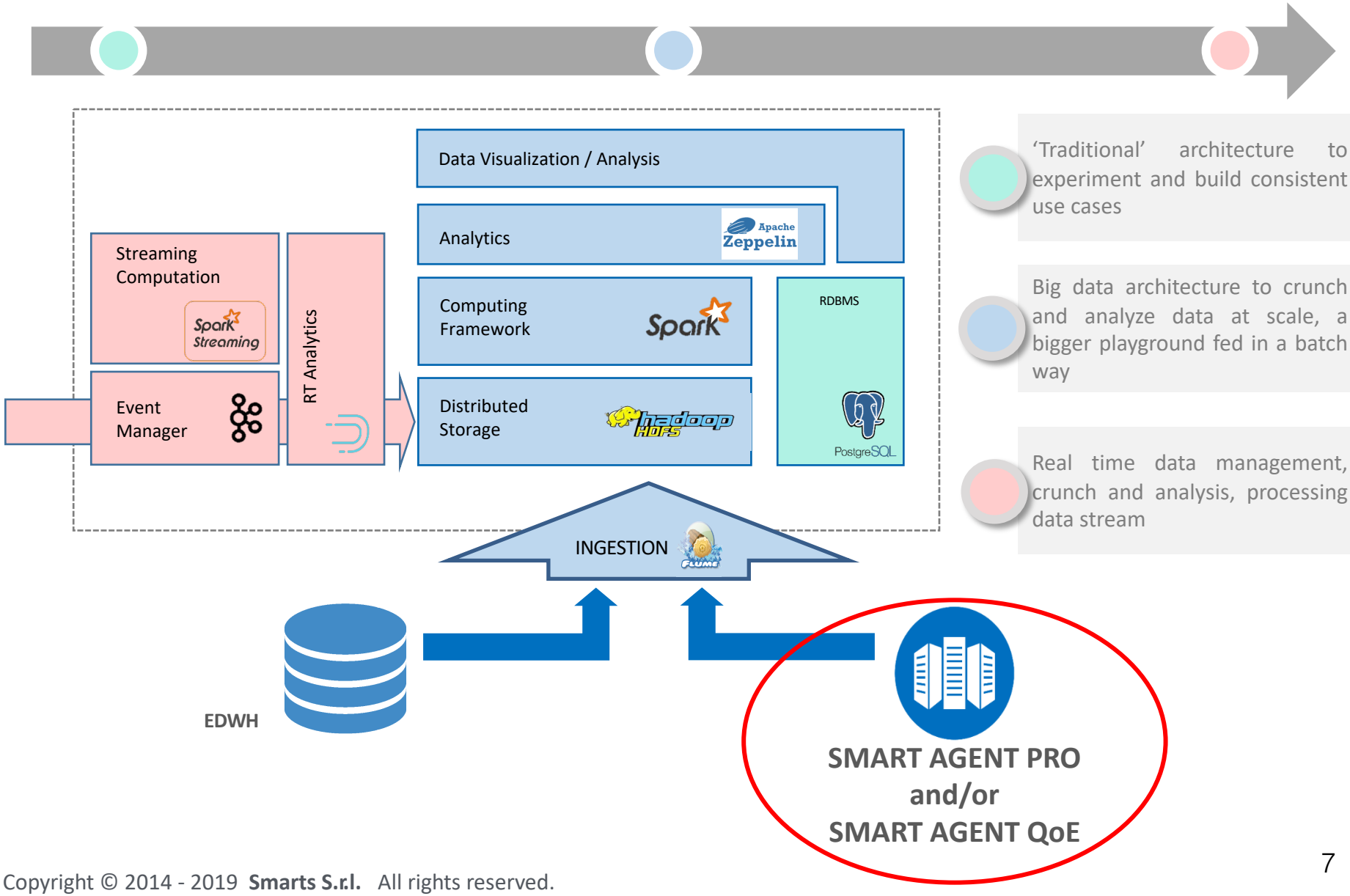
Position in Big Data solutions



'Traditional' architecture to experiment and build consistent use cases

Big data architecture to crunch and analyze data at scale, a bigger playground fed in a batch way

Real time data management, crunch and analysis, processing data stream

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