Final Recommendations
(WP4 - Evaluation)

HeERO International conference
HeERO Final EVENT
21th November 2013
Bucharest

Content

- Evaluation of Key Performance Indicators

- Interoperability
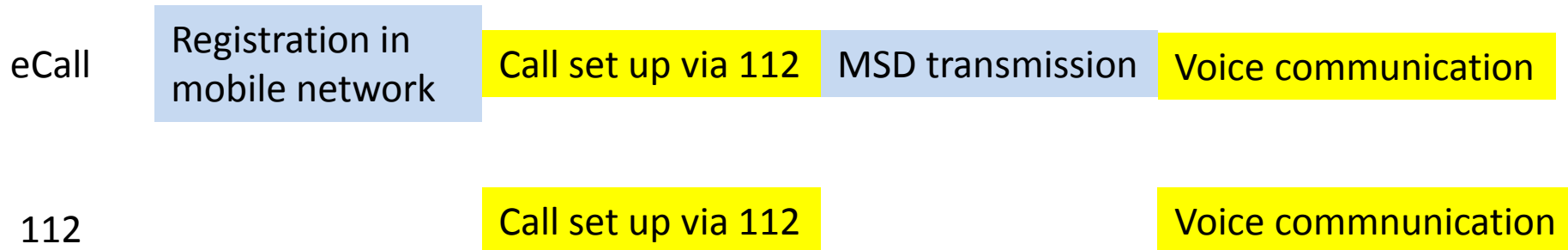
- Recommendations

- Conclusions

Objectives

- common and effective evaluation between the pilot sites

- Evaluate interoperability

- Provide lessons learned and recommendations

- Provide conclusions

Evalution of the piloting phase

- Refinement of measurements in phase I based on recommendations for phase II
- Collection of raw data per pilot site
- Measuring KPIs in interoperability tests with the other pilot sites
- Statistical evaluation of data per pilot site and per interoperability test
  - Time series diagrams of the values of relevant KPIs
  - Fundamental KPI statistical description for every time series (mean, median, variance, standard deviation, skewness, kurtosis and histogram with normal probability)
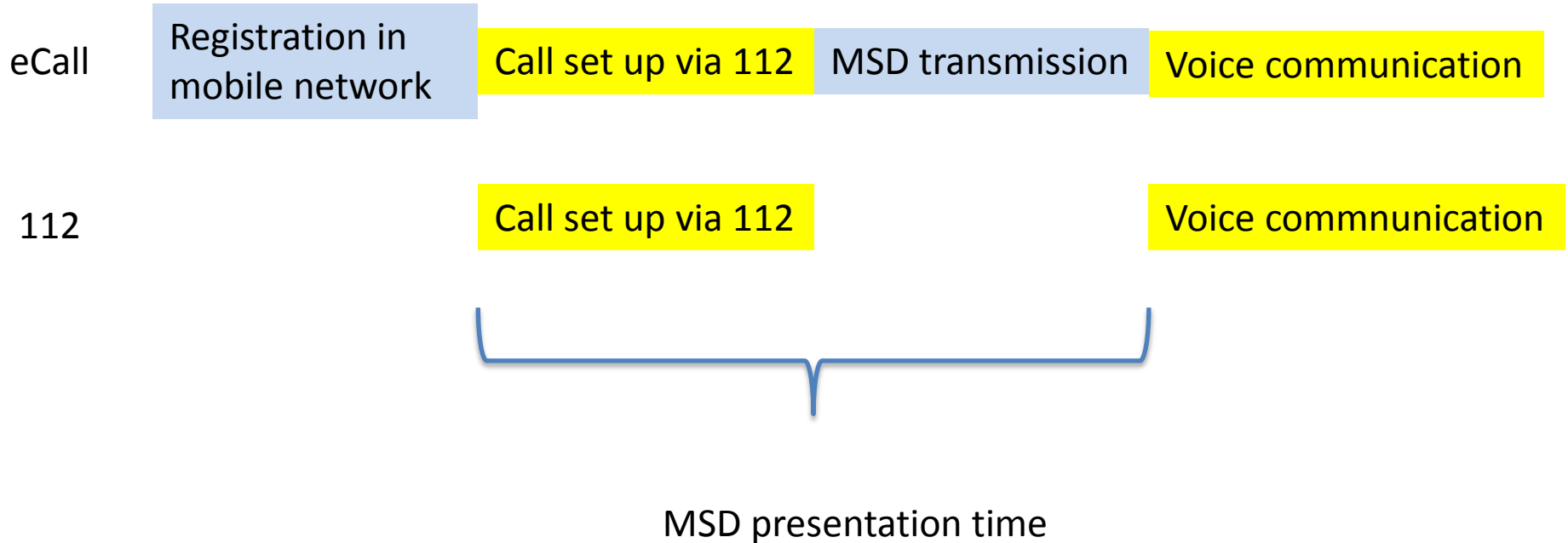
eCall vs. 112

	Registration in mobile network	Call set up via 112	MSD transmission	Voice communication
eCall				

		Call set up via 112		Voice commnunication
112				

KPIs

	Name of KPI								
KPI_001a	automatically initiated eCalls	A	A	A	A	-	A	-	A
KPI_001b	manually initiated eCalls	M	M	M	M	M	M	M	M
KPI_002a	Success rate using 112	A, M	A,M	-	M	M	A, M	M	A,M
KPI_002b	Success rate long number	A, M	-	M, A	M,A	-	A, M	M	A,M
KPI_003	Success rate of received MSDs	A, M	A,M	M, A	M,A	M	A, M	M	A,M
KPI_004	Success rate of correct MSDs	A, M	A,M	M, A	M	M	A, M	M	A,M
KPI_005	Duration MSD presented in PSAP	-	A,M	-	M	M	A, M	M	A,M
KPI_006	Success rate voice transmissions	A. M	A,M	M	M	M	A, M	M	A,M
KPI_007a	Duration voice channel blocking	A, M	A,M	M, A	M	-	A, M	M	A,M
KPI_007b	Duration voice retransmi. MSD	-	-	M, A	-	-	A, M	-	-
KPI_008	Time for call establishment	A, M	A,M	-	-	M	A, M	-	A,M
KPI_009	Accuracy of position	A	-	-	M	-	-	-	A,M
KPI_010	Number of usable satellites	A	A,M	-	-	-	-	-	-
KPI_011	Geometric dilution of precision	A	-	-	-	-	-	-	-
KPI_012	Time between positioning fixes	A	-	-	-	-	-	-	-
KPI_013	Success rate heading	-	-	-	M	-	A, M	-	A,M

KPIs cntd.

	Name of KPI								
KPI_014	Success rate VIN without EUCARIS	A, M	-	-	-	-	A, M	-	-
KPI_015	Success rate of VIN with EUCARIS	-	-	-	-	-	A, M	-	A,M
KPI_016	Time for VIN with EUCARIS	-	-	-	-	M	A, M	-	A,M
KPI_017	Dispatch time to rescue forces	A	-	-	-	M	A, M	-	-
KPI_018	Time to activate rescue forces	-	-	-	-	-	A, M	-	-
KPI_019	Dispatch time to TMC	-	-	-	-	-	A, M	-	-
KPI_020	Success rate pres. data in TMC	-	-	-	-	-	A, M	-	-
KPI_021	Number of successful call-backs	-	-	M	-	M	A, M	-	-
KPI_022	Success rate of call-backs	-	-	M	-	M	A, M	-	-
KPI_023	GSM network latency	-	A,M	-	-	-	A, M	-	-
KPI_024	112 National network latency	-	A,M	-	-	-	A, M	-	-
KPI_025	112 Operator reaction time	-	-	-	-	-	A, M	-	-
KPI_026	Time ack. of emergency services	-	-	-	-	-	A, M	-	-
KPI_027	Total response time	-	-	-	-	-	A, M	-	-
KPI_028a/b	# cross-border/ interoperability	-	-	M	-	-	A, M	M	A,M
KPI_IT_bCall 1	Success rate with active bCall	-	-	-	-	M	-	-	-
KPI_IT_bCall 2	eCall activation with active bCall	-	-	-	-	M	-	-	-

KPI 05 MSD

eCall | Registration in mobile network | Call set up via 112 | MSD transmission | Voice communication

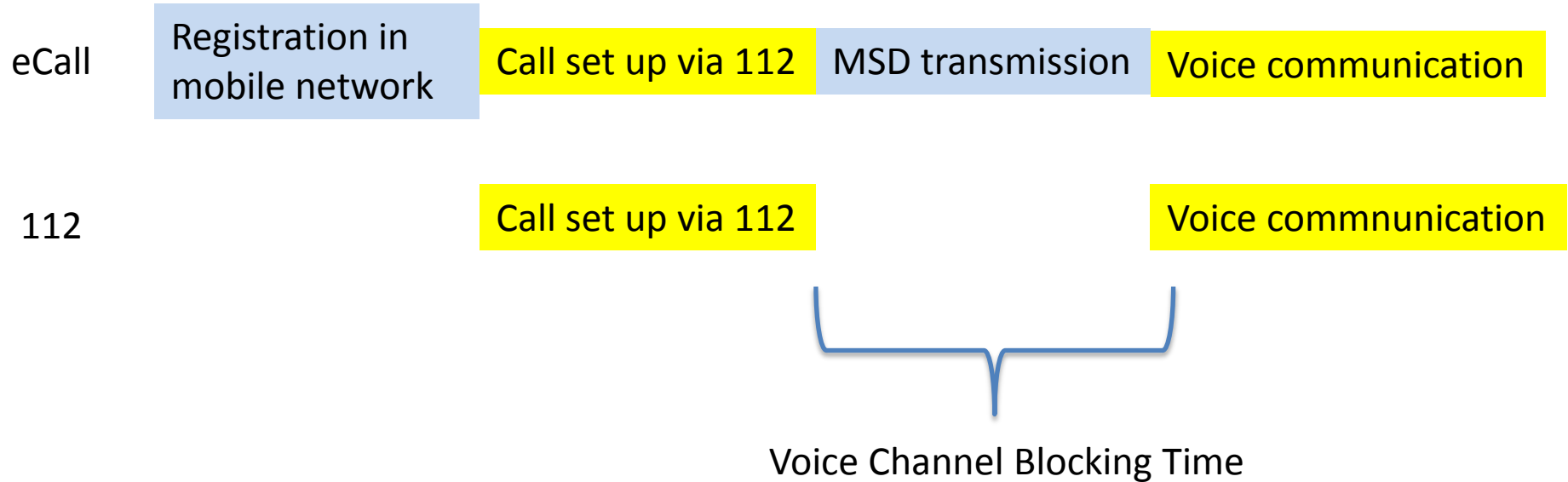112 | Call set up via 112 | Voice commnunication

MSD presentation time

KPI 05: MSD presentation time
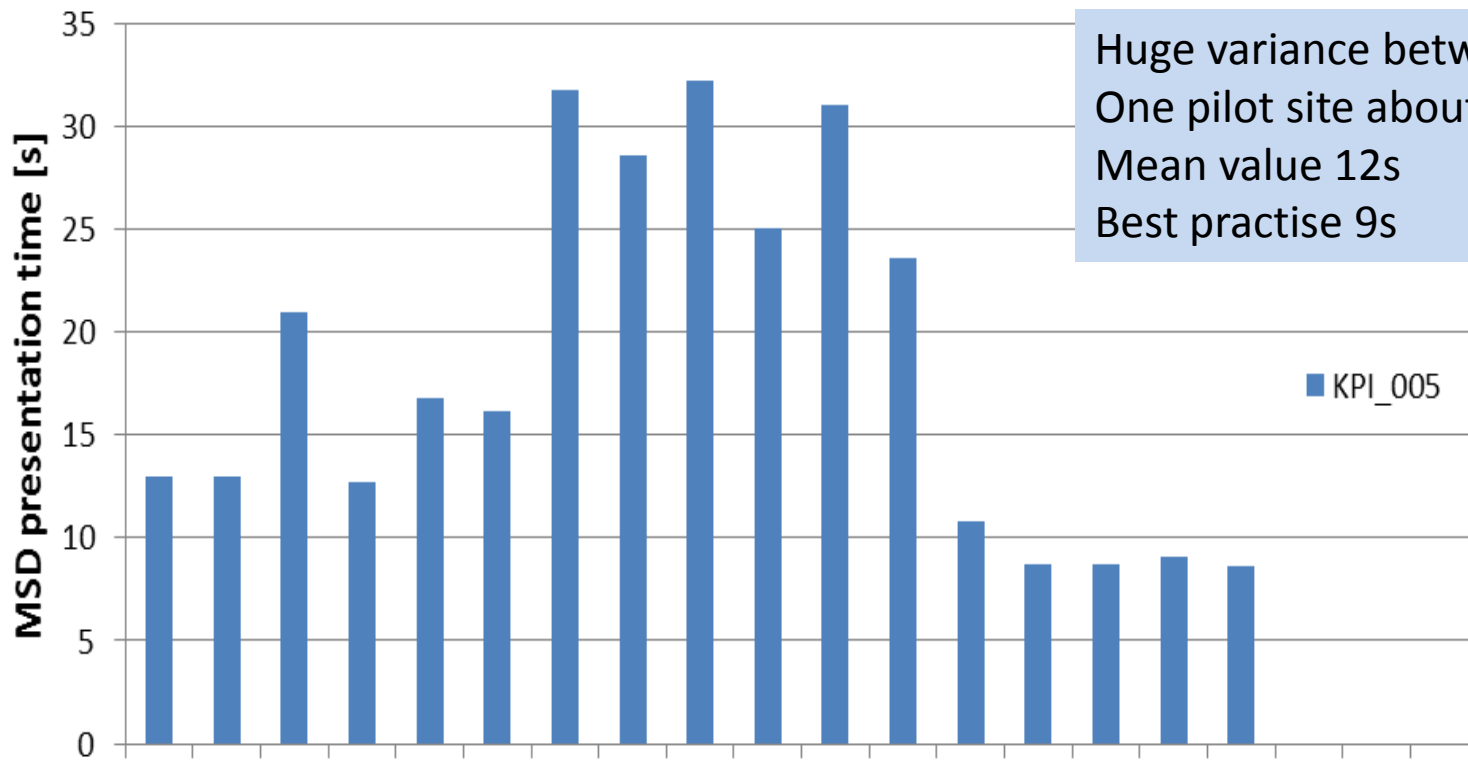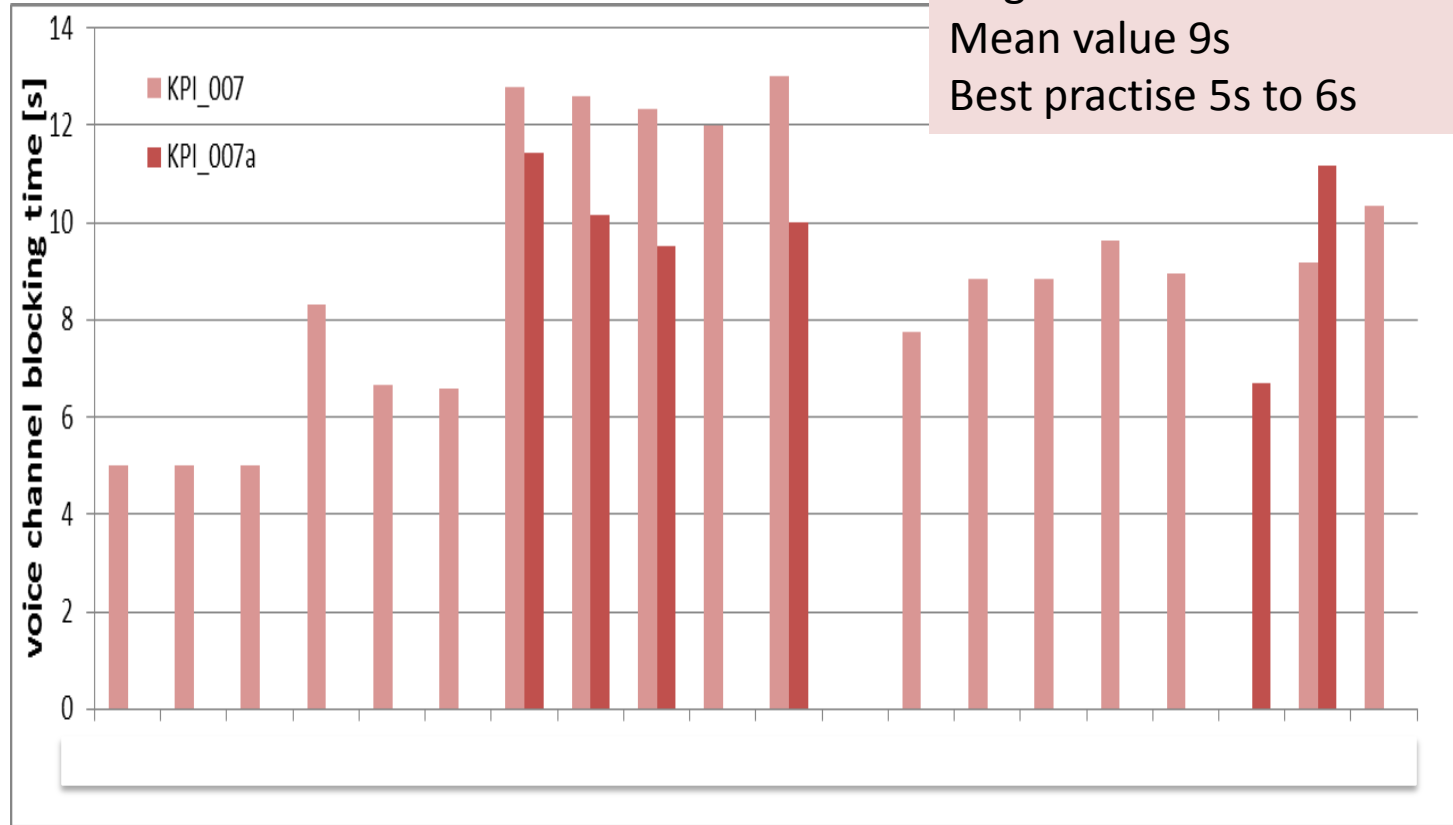

Huge variance between 8s and 32s
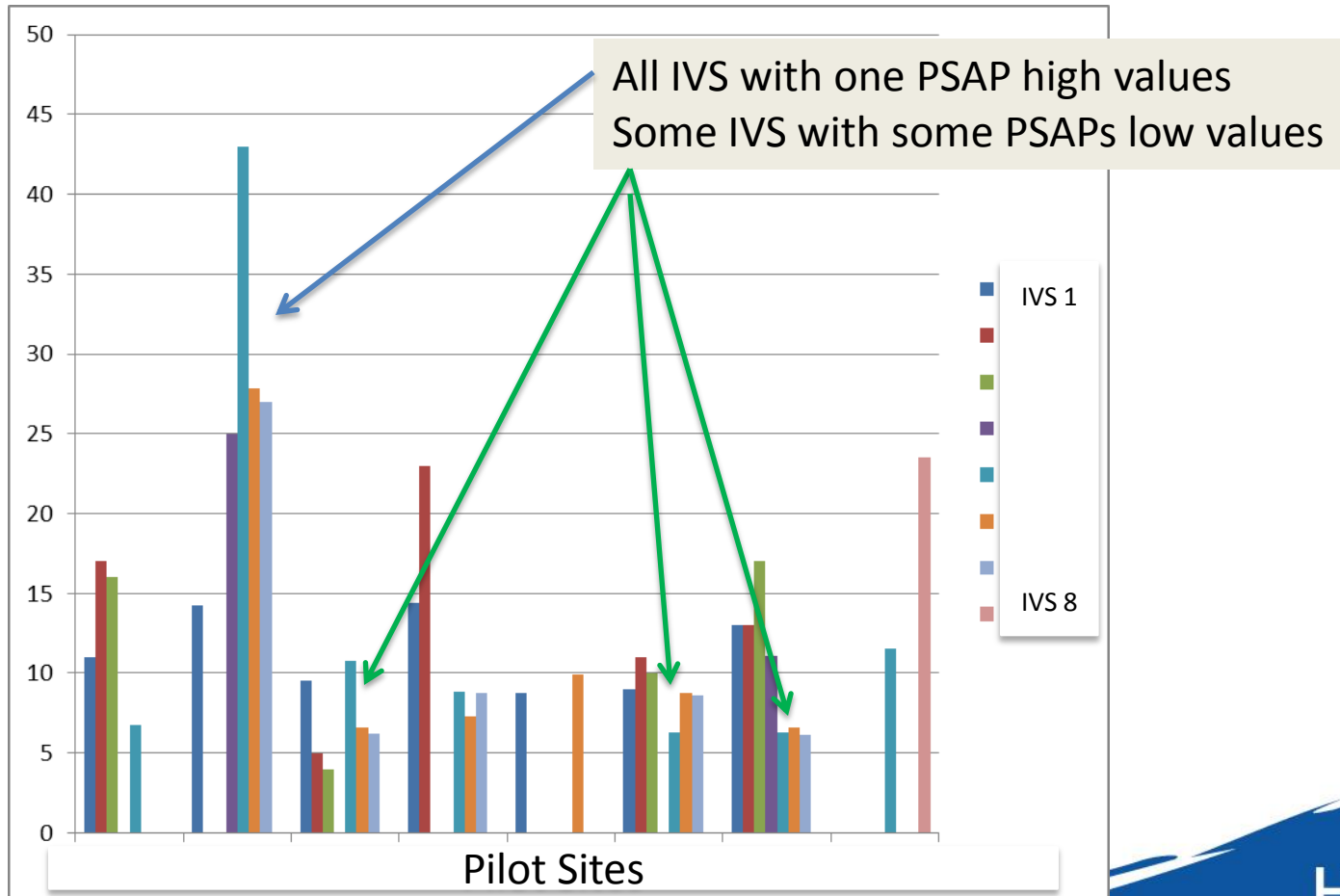One pilot site about 15s longer
Mean value 12s
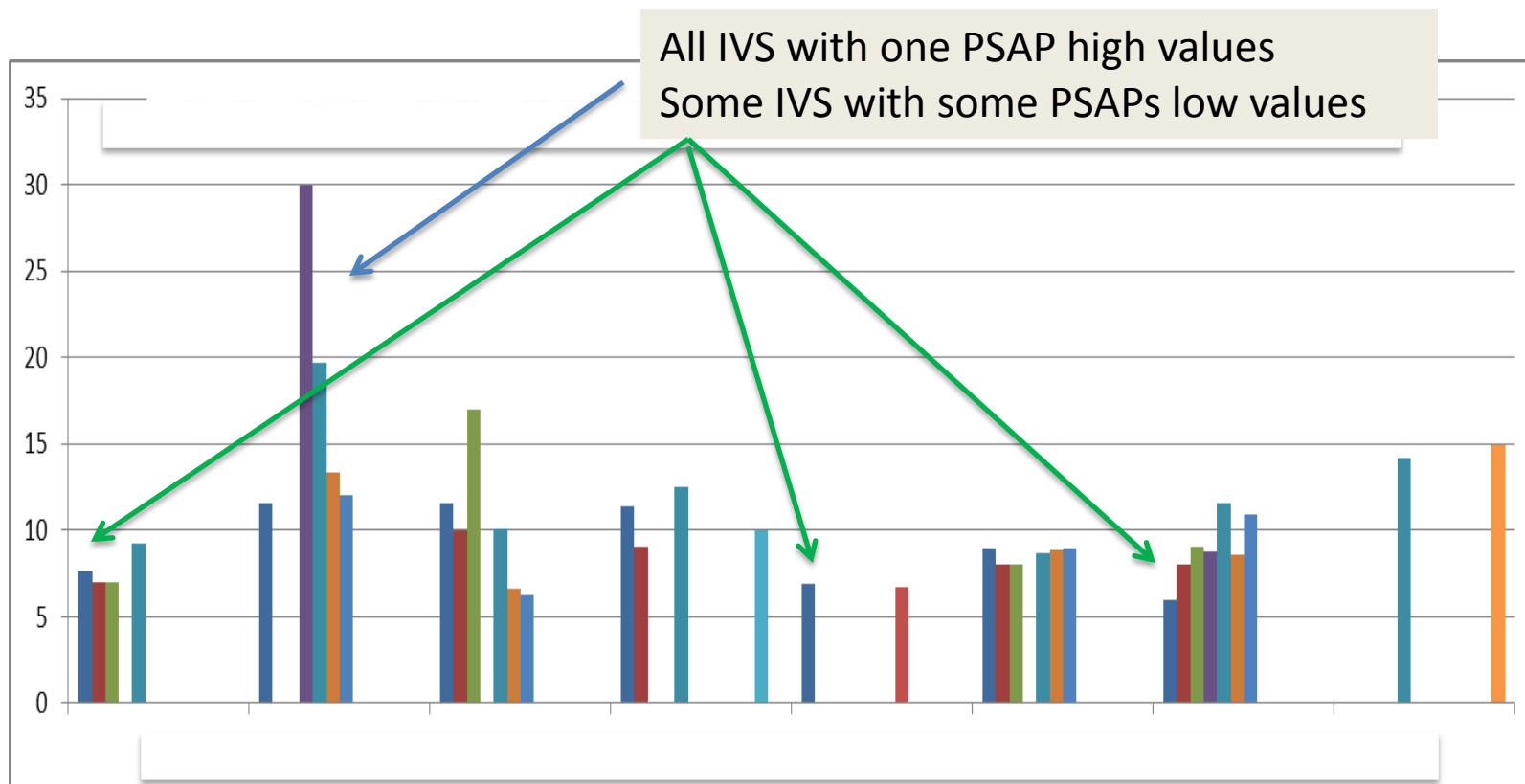Best practise 9s

KPI 07 Voice Channel Blocking Time

eCall

| Registration in mobile network | Call set up via 112 | MSD transmission | Voice communication |

112

| Call set up via 112 | Voice commnunication |

Voice Channel Blocking Time

KPI 07: voice channel blocking time

Huge variance between 5s and 13s
Mean value 9s
Best practise 5s to 6s

Harmonised eCall European Pilot

KPI 05 MSD - interoperability

All IVS with one PSAP high values
Some IVS with some PSAPs low values

KPI 07 Voice Channel - interop

All IVS with one PSAP high values
Some IVS with some PSAPs low values

Harmonised eCall European Pilot

Recommendations

- Integrating all piloting experiences of piloting towards implementation

- Transferring major experiences to solutions and recommendations

- Collected by taking into account the results country by country

General Recommendations

- The HLAP standard has to be adopted to allow a shorter voice channel blocking time

- The heading information does not provide in all implementations the direction of travel but sometimes only the direction of the vehicle when the eCall was triggered. The last three geo positions in the MSD provide a more reliable way to determine direction of travel. Thus the reserved bits in the MSD could be reused for other purposes

- For any time information the GNSS-synchronized time should be used across the architecture (IVS, mobile network nodes, PSAPs)

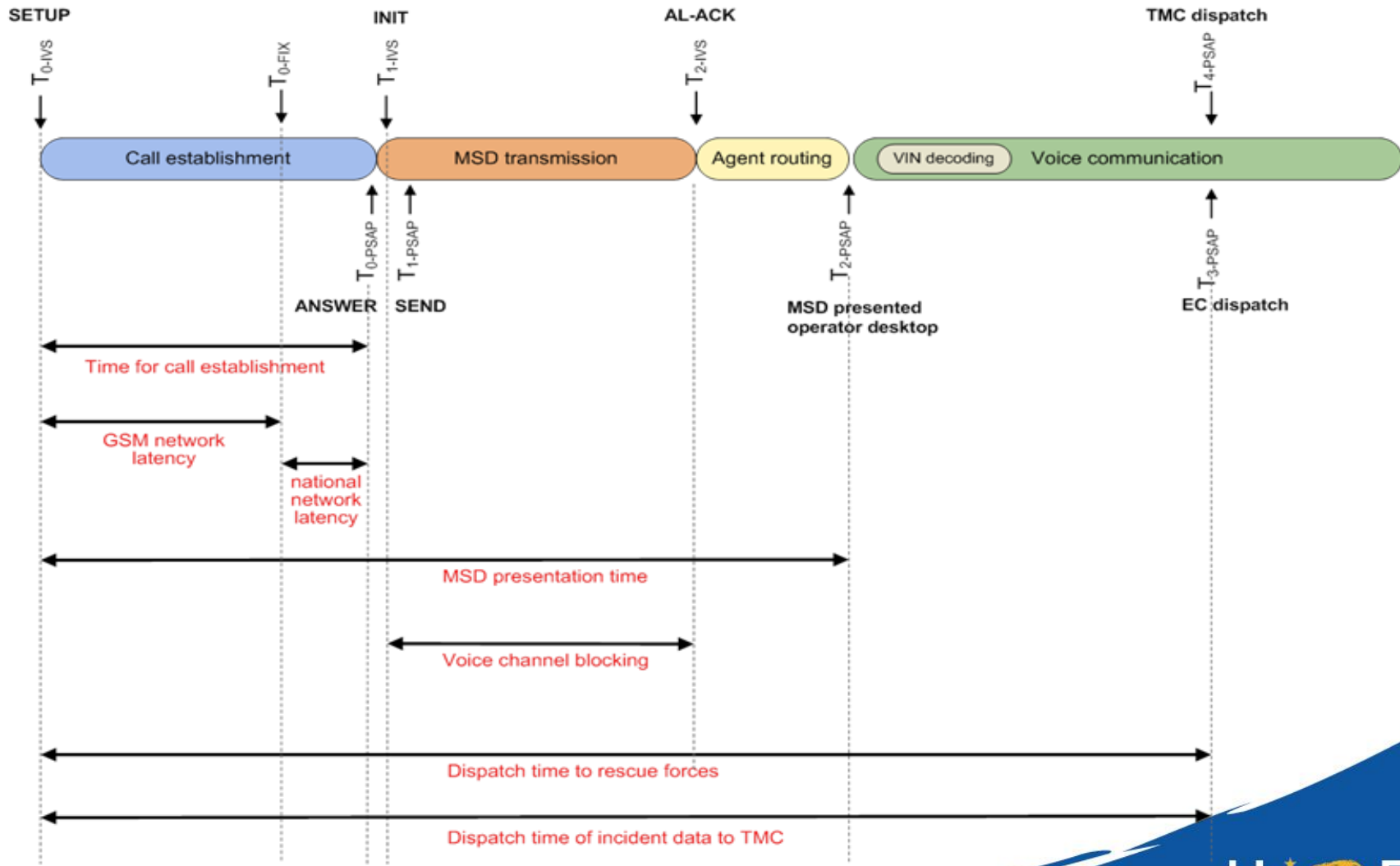Harmonised eCall European Pilot

Recommendations (IVS)

- Vehicle manufacturers shall implement best practice to minimize voice channel blocking time

- In case of retransmission of MSD, the content should always be updated providing valuable information to PSAPs e. g. to identify false alarms

- Vehicle manufacturers should try to use additional information (assisted and augmented GNSS together with accelerometers, vehicle digital maps) to determine the position of the vehicle if feasible.
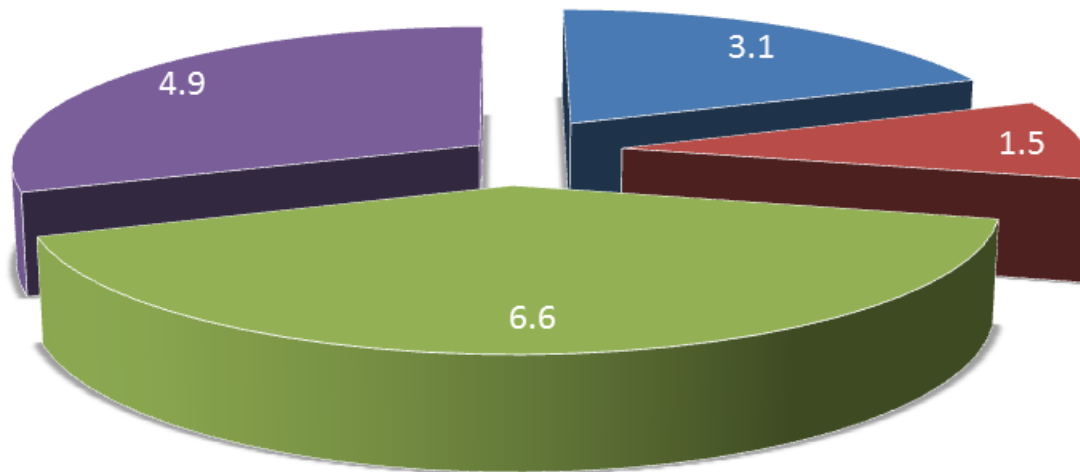
Conclusion

- Evaluation if requested performance of eCall service achievable with approved eCall standards in the existing public mobile networks

- The outcome confirms that the pan-European eCall is working according to expectations

- There is still room for improvement both in European standards and in the implementation by the suppliers as pointed out in the recommendations

Thank you for attention
Questions ?

Timers

eCall Phases