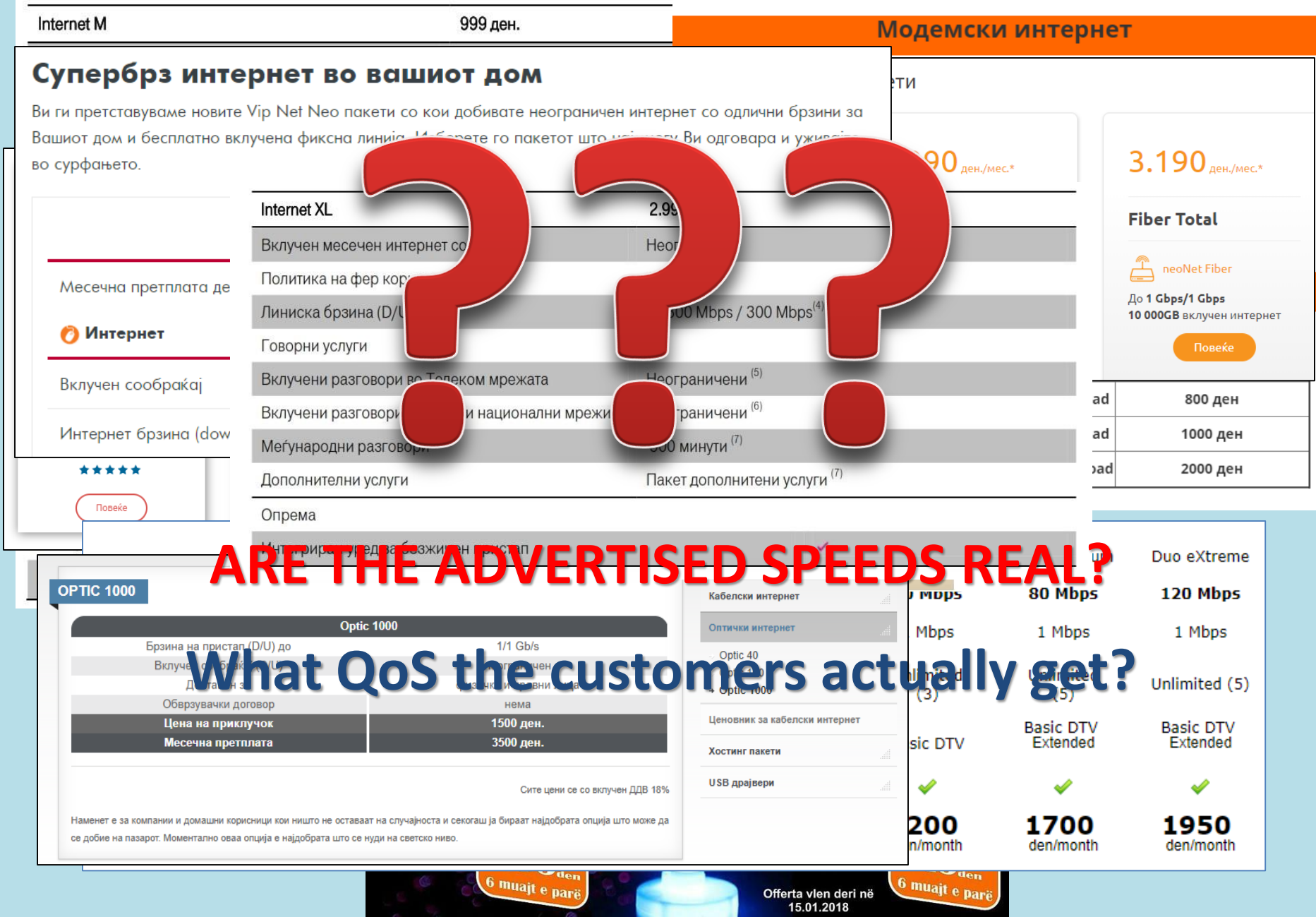
РЕПУБЛИКА МАКЕДОНИЈА
АГЕНЦИЈА ЗА ЕЛЕКТРОНСКИ КОМУНИКАЦИИ

"Development of internet speed measurement system for fixed networks"

Zoran Aleksov
Agency for electronic communications – Macedonia

Development of internet speed measurement system for fixed networks



REGULATION (EU) 2015/2120

(25 November 2015)

… **national regulatory authorities should assess** the impact on the availability and general **quality of internet access services** by analyzing, inter alia, **quality of service parameters (such as latency, jitter, packet loss), the levels and effects of congestion in the network**, **actual versus advertised speeds,** the performance of internet access services as compared with services other than internet access services, and quality as perceived by end-users…

…In order to empower end-users in such situations, ***providers of internet access services should therefore inform end-users in the contract of the speed which they are able realistically to deliver.*** **The normally available speed is understood to be the speed that an end-user could expect to receive most of the time when accessing the service**…

REGULATION (EU) 2015/2120

(25 November 2015)

Article 4

Transparency measures for ensuring open internet access

1. Providers of internet access services shall ensure that any contract which includes internet access services specifies at least the following:

…

(d) a clear and comprehensible explanation of the minimum, normally available, maximum and advertised download and upload speed of the internet access services in the case of fixed networks...

…

4. Any significant discrepancy, continuous or regularly recurring, between the actual performance of the internet access service regarding speed or other quality of service parameters and the performance indicated by the provider of internet access services in accordance with points (a) to (d) of paragraph 1 shall, where the relevant facts are established by a monitoring mechanism certified by the national regulatory authority, be deemed to constitute non-conformity of performance for the purposes of triggering the remedies available to the consumer in accordance with national law…

REGULATION (EU) 2015/2120

(25 November 2015)

Article 5

Supervision and enforcement

1. National regulatory authorities shall closely monitor and ensure compliance with Articles 3 and 4, and shall promote the continued availability of non-discriminatory internet access services at levels of quality that reflect advances in technology**. For those purposes, national regulatory authorities may impose requirements concerning technical characteristics, minimum quality of service requirements and other appropriate and necessary measures on one or more providers of electronic communications to the public, including providers of internet access services.**

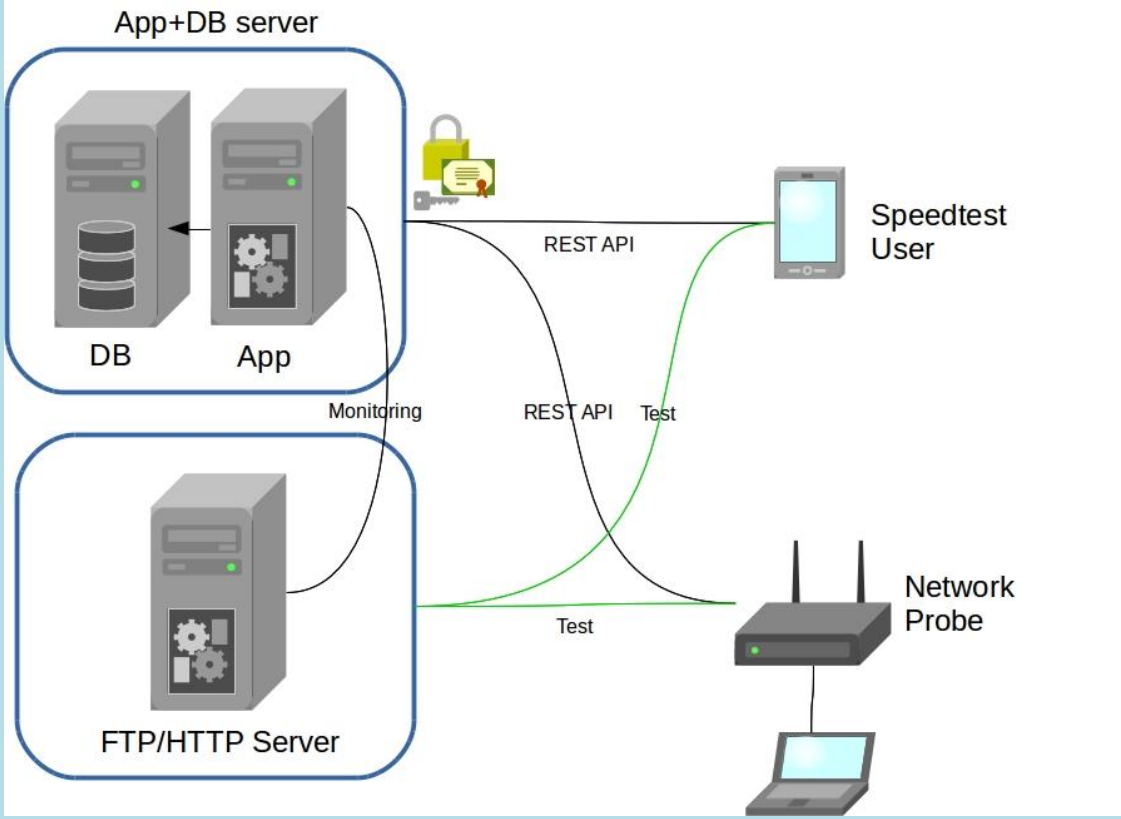
National regulatory authorities shall publish reports on an annual basis regarding their monitoring and findings, and provide those reports to the Commission and to BEREC.

2. At the request of the national regulatory authority, providers of electronic communications to the public, including providers of internet access services, shall make available to that national regulatory authority information relevant to the obligations set out in Articles 3 and 4, in particular information concerning the management of their network capacity and traffic, as well as justifications for any traffic management measures applied. Those providers shall provide the requested information in accordance with the time-limits and the level of detail required by the national regulatory authority.

…

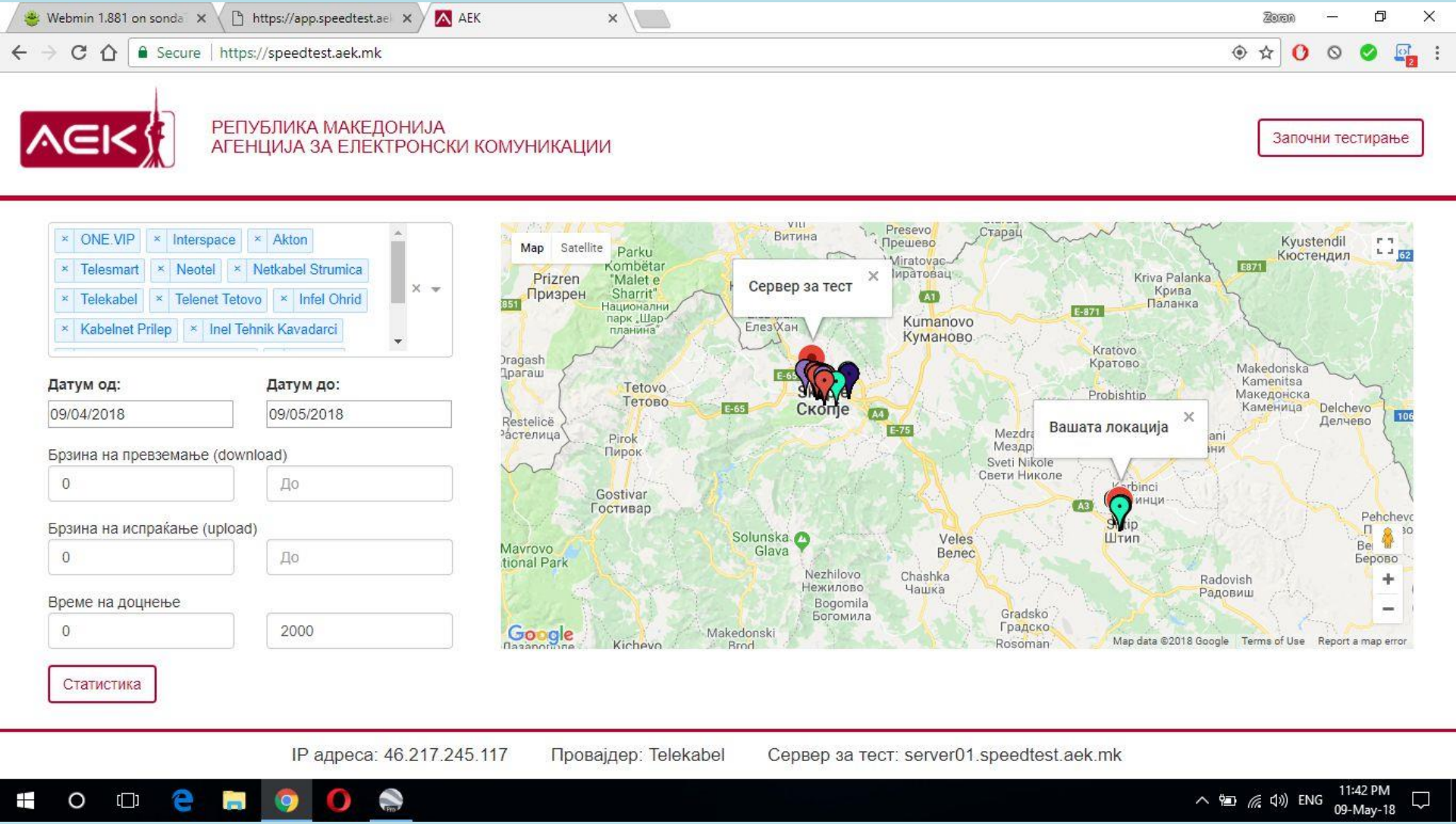
In order to follow the guidelines in the Regulation, we started a project that is now in the final stage and we expect very soon to start using it.

We have set up a system for measuring the quality of broadband Internet access in a fixed network. The system is composed of components from the server and client side.



Development of internet speed measurement system for fixed networks

Client can test the internet speed using the web-based application (speedtest.aek.mk)



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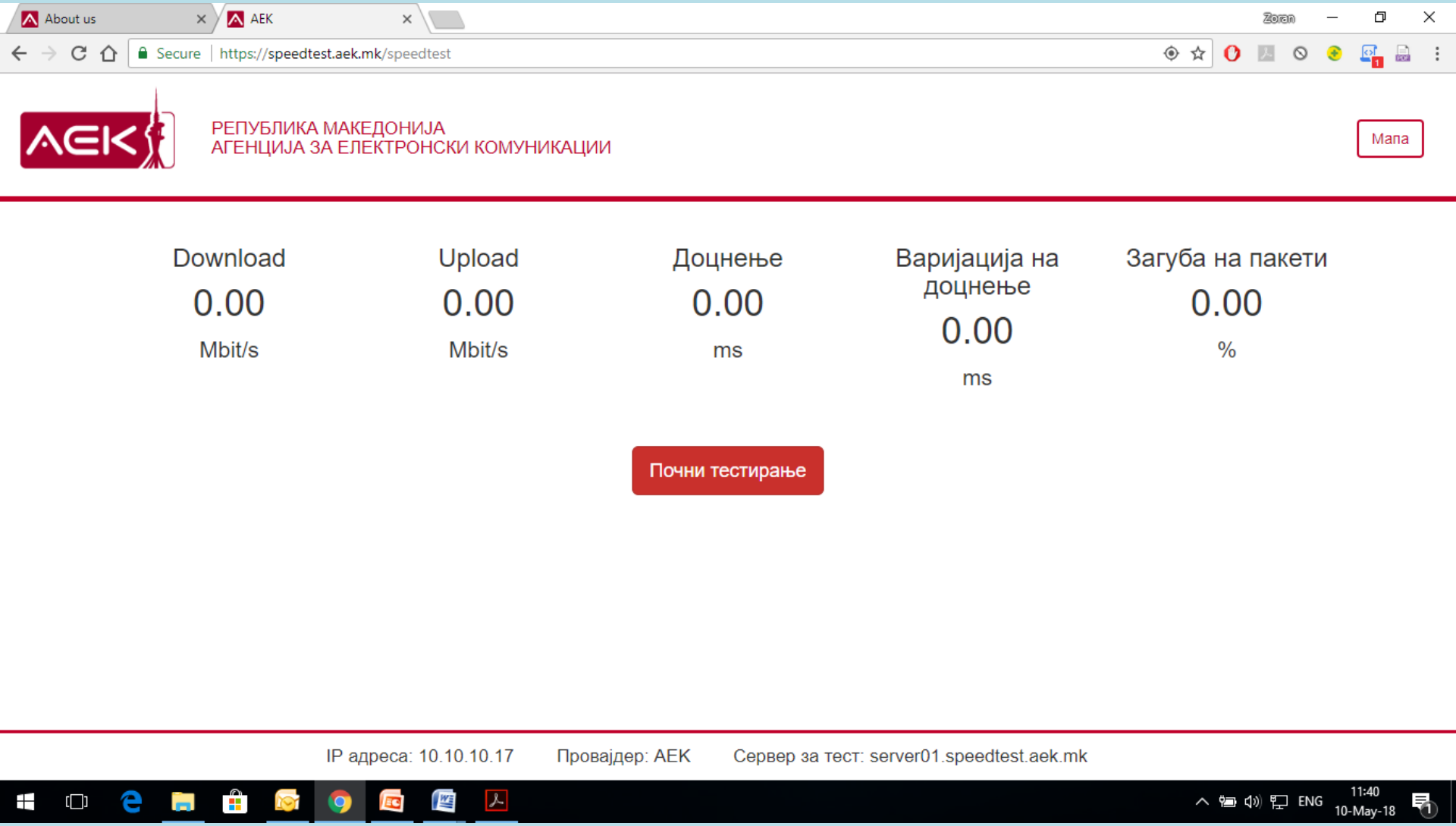

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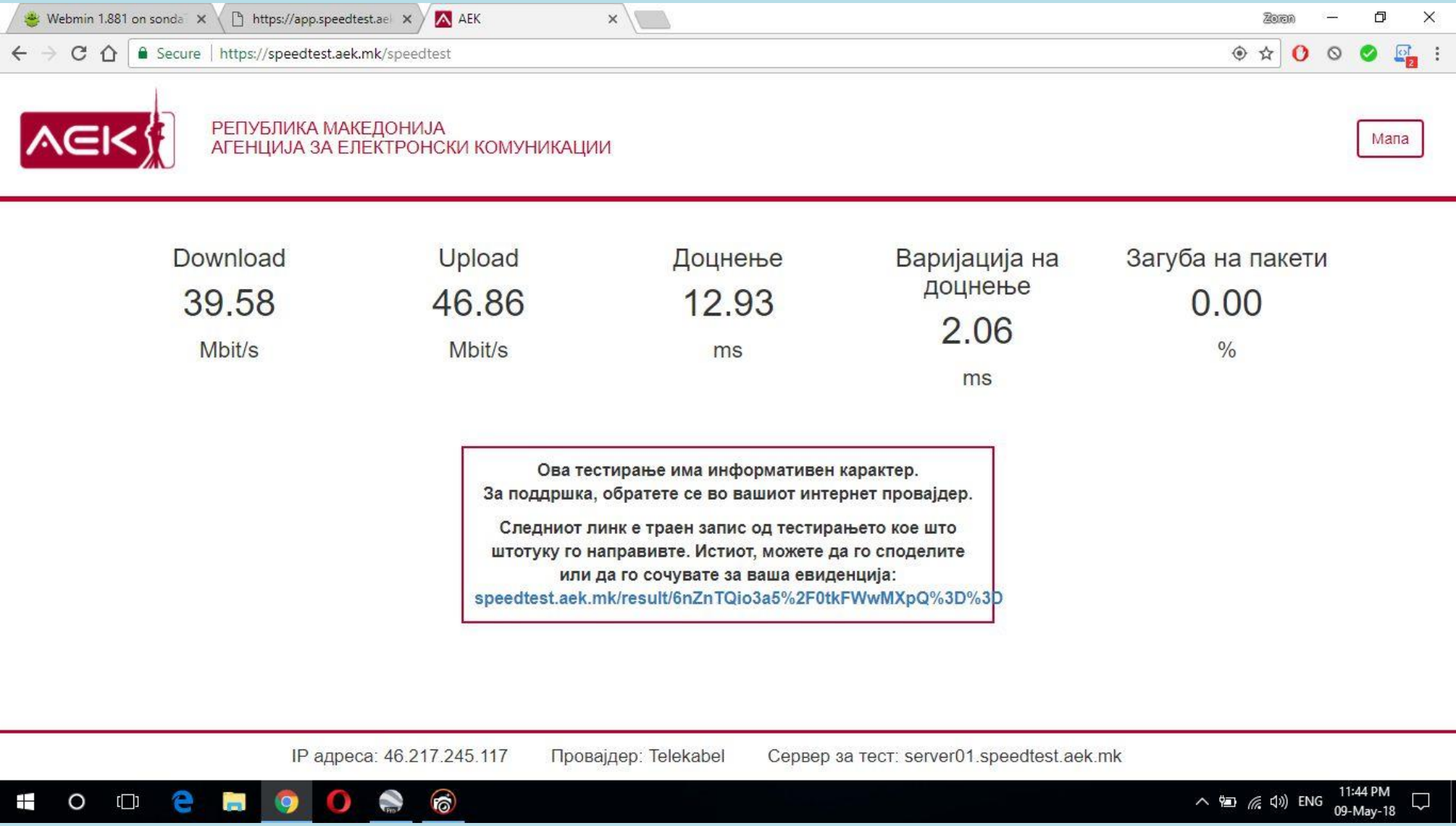

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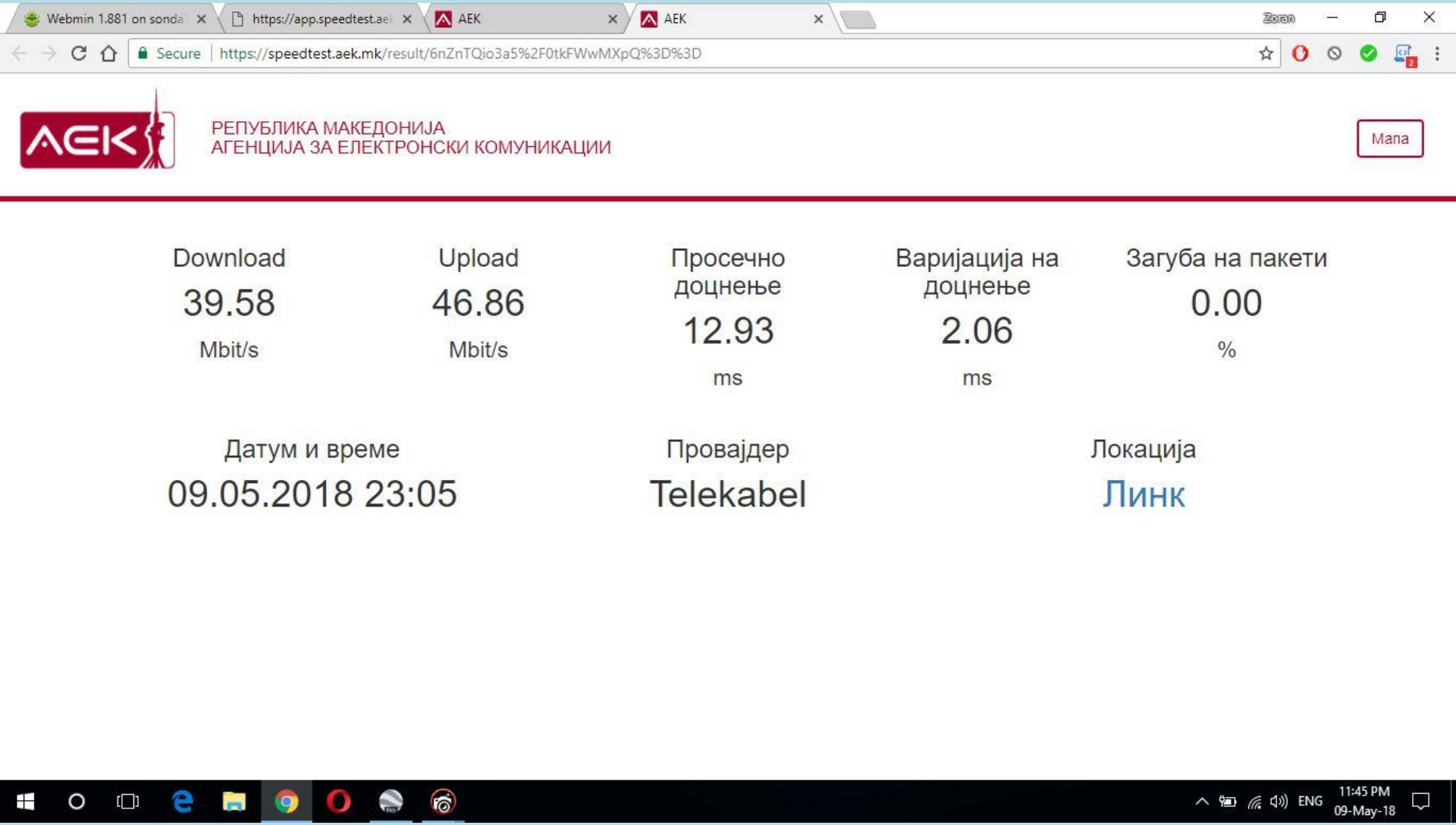

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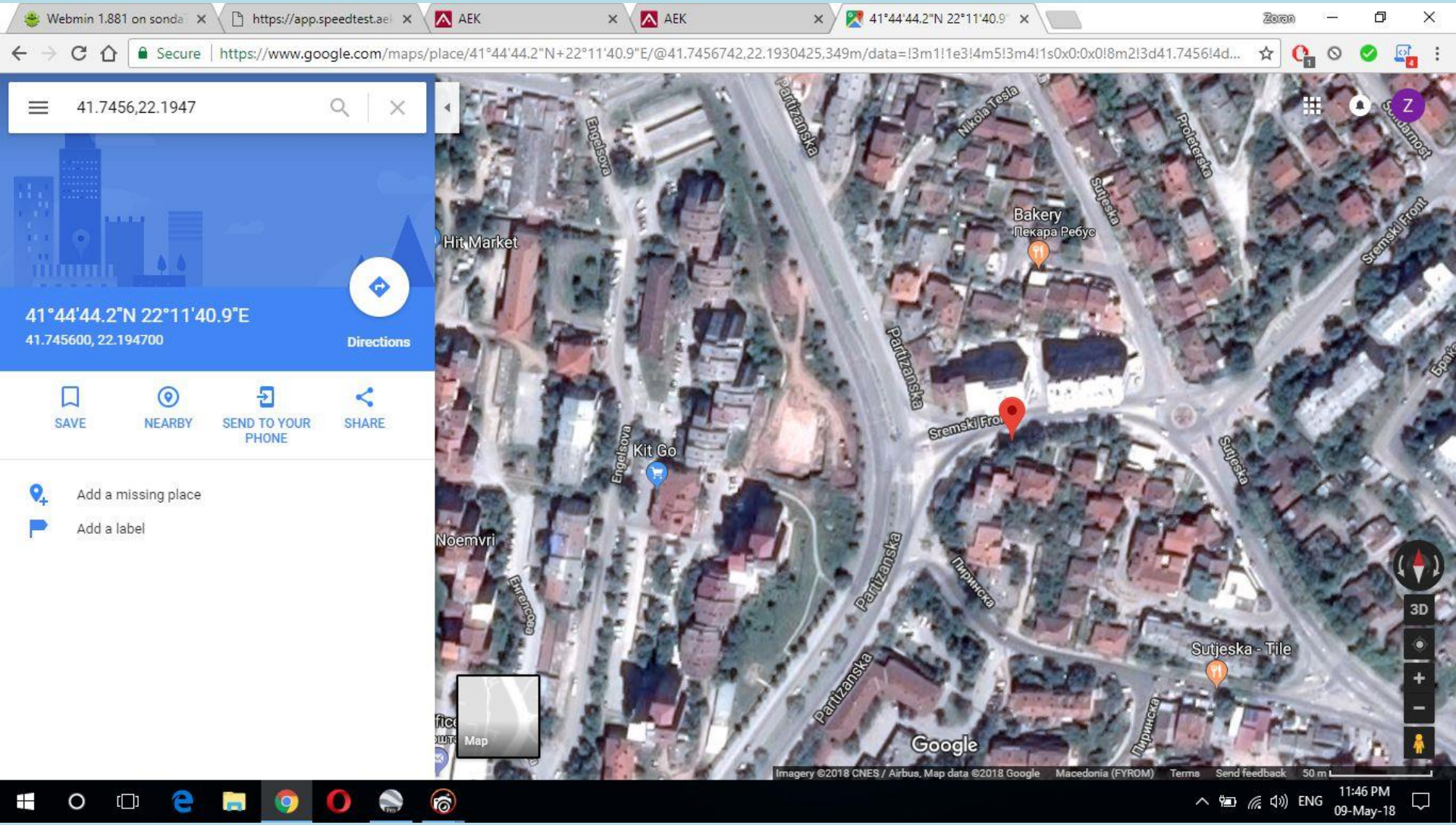
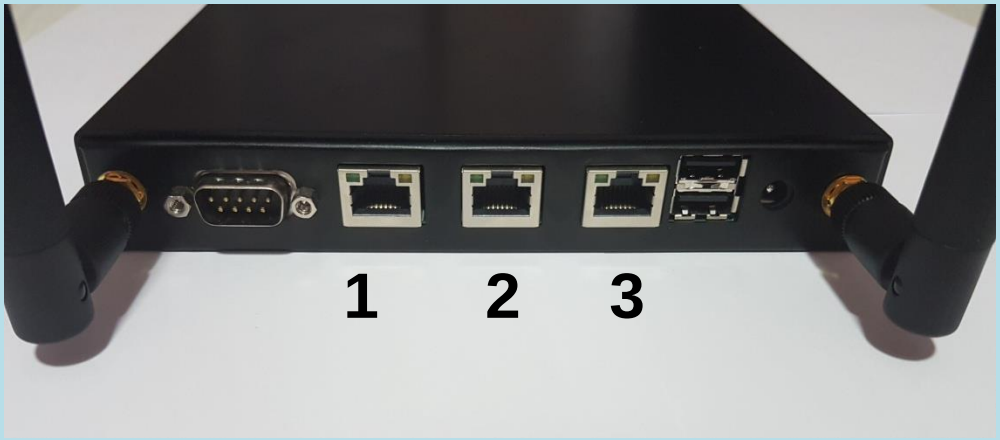
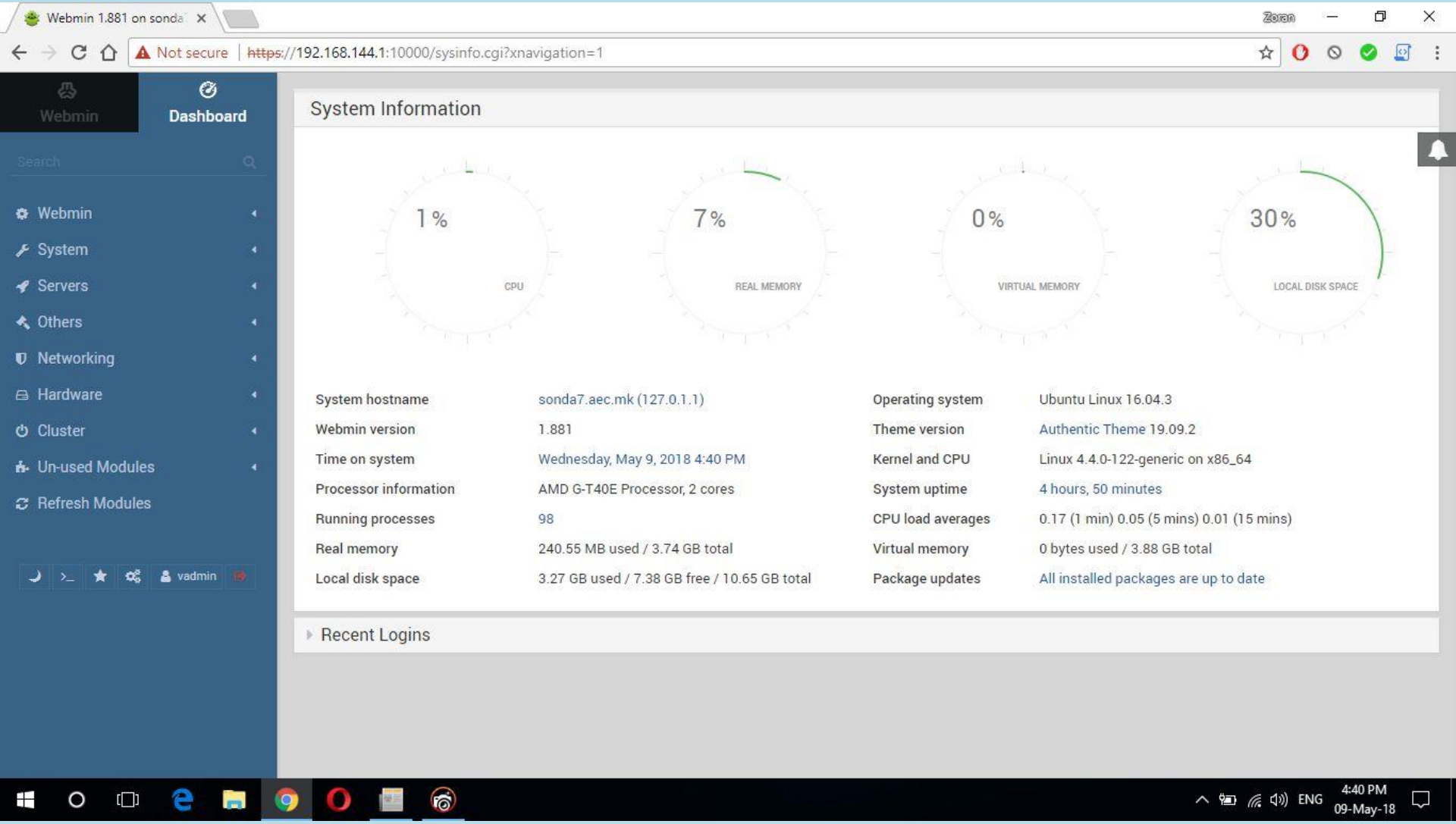


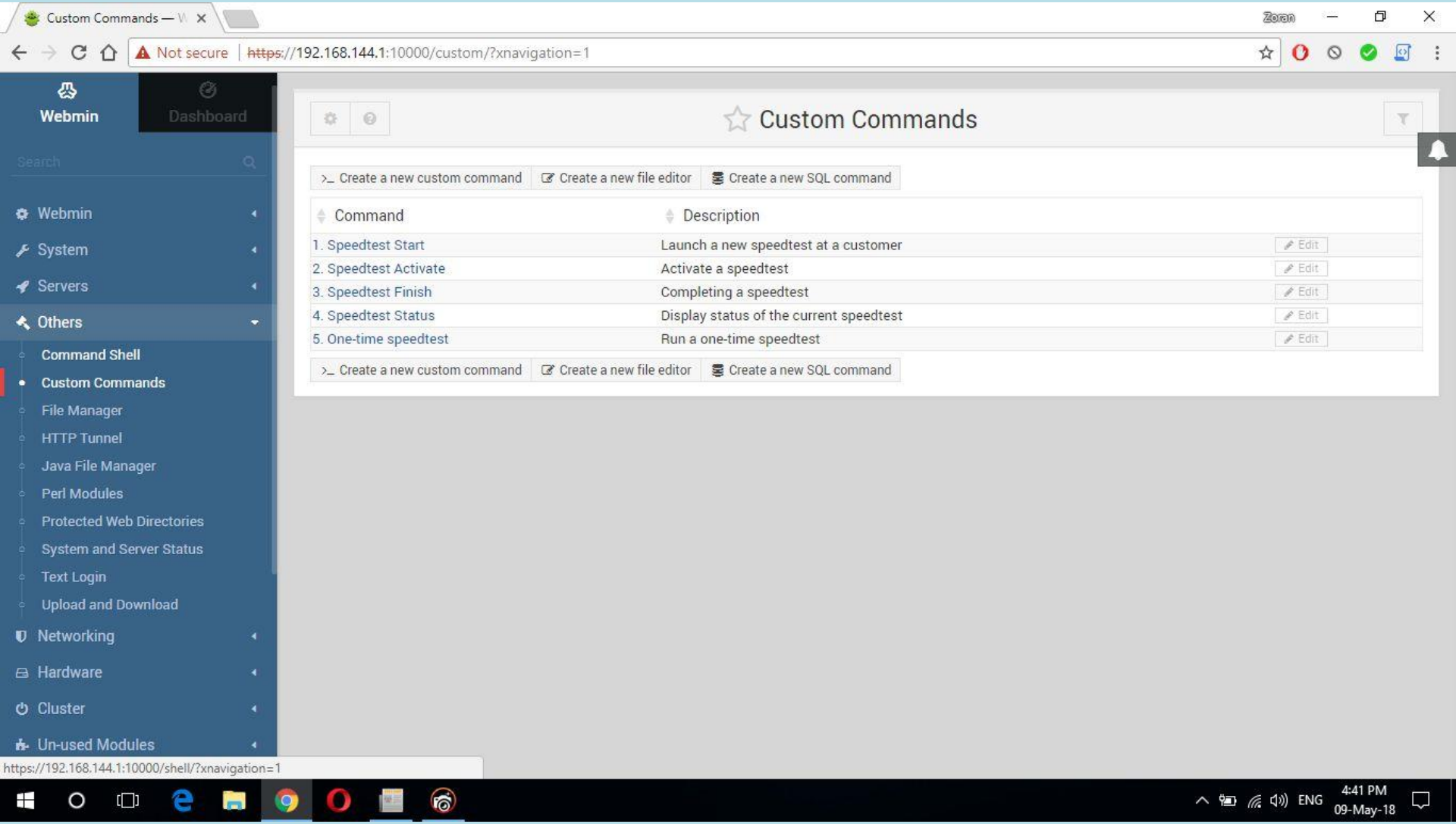
On-site, the measurement will be performed by an AEC's technician, with a dedicated probe



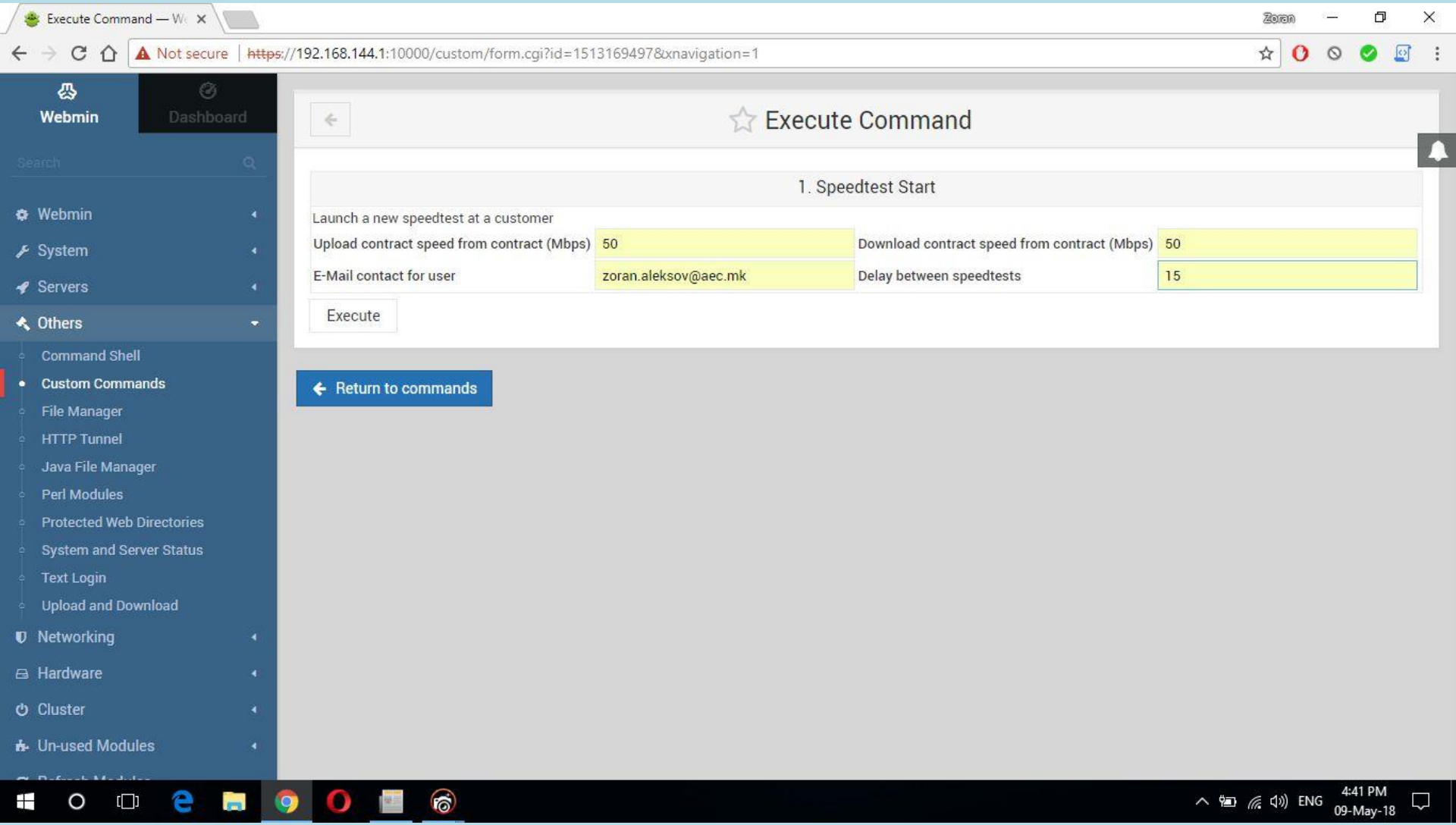
Probe Screenshot 1 – entry screen (System Information)



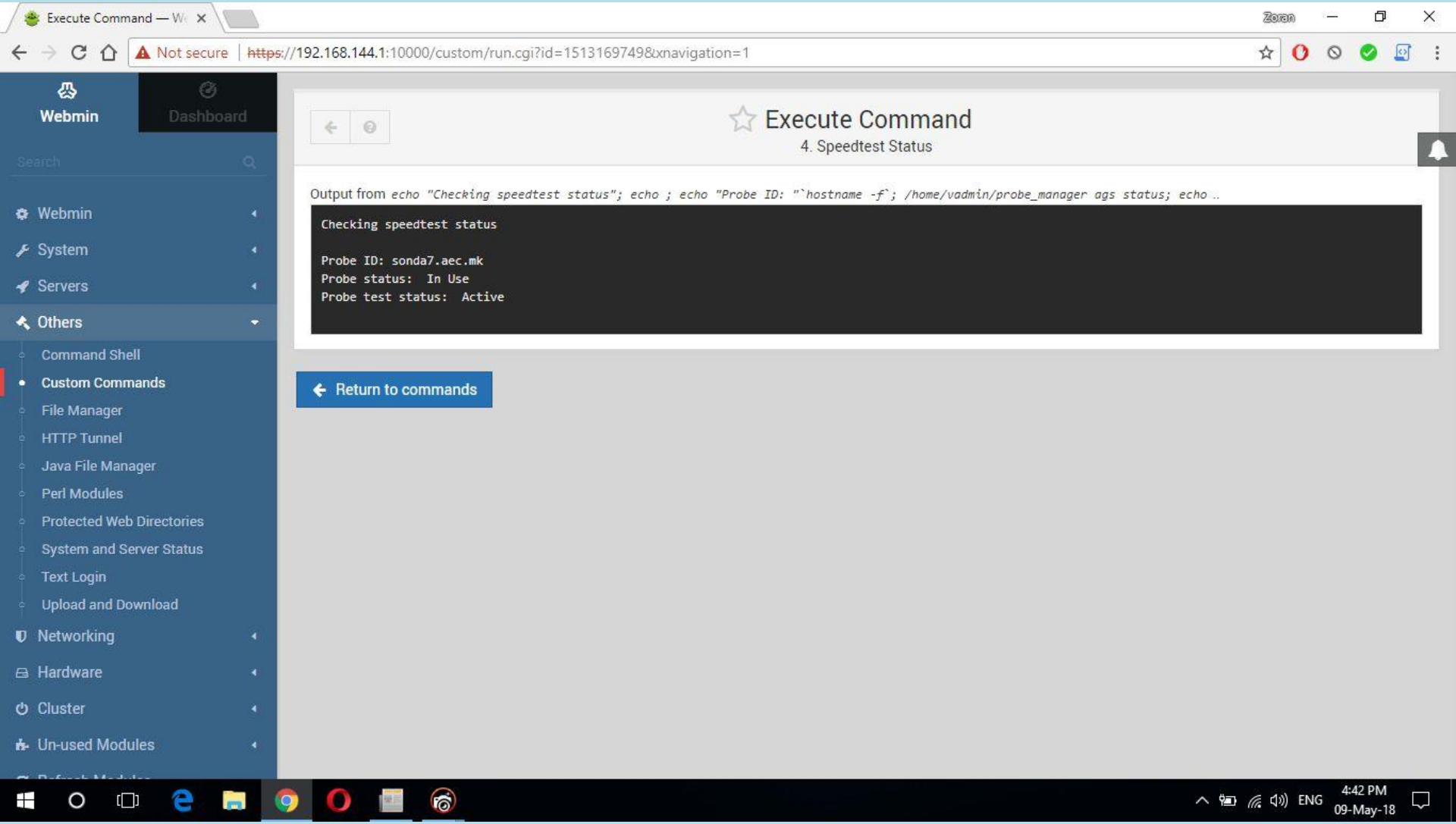
Probe Screenshot 2 – Custom Commands screen



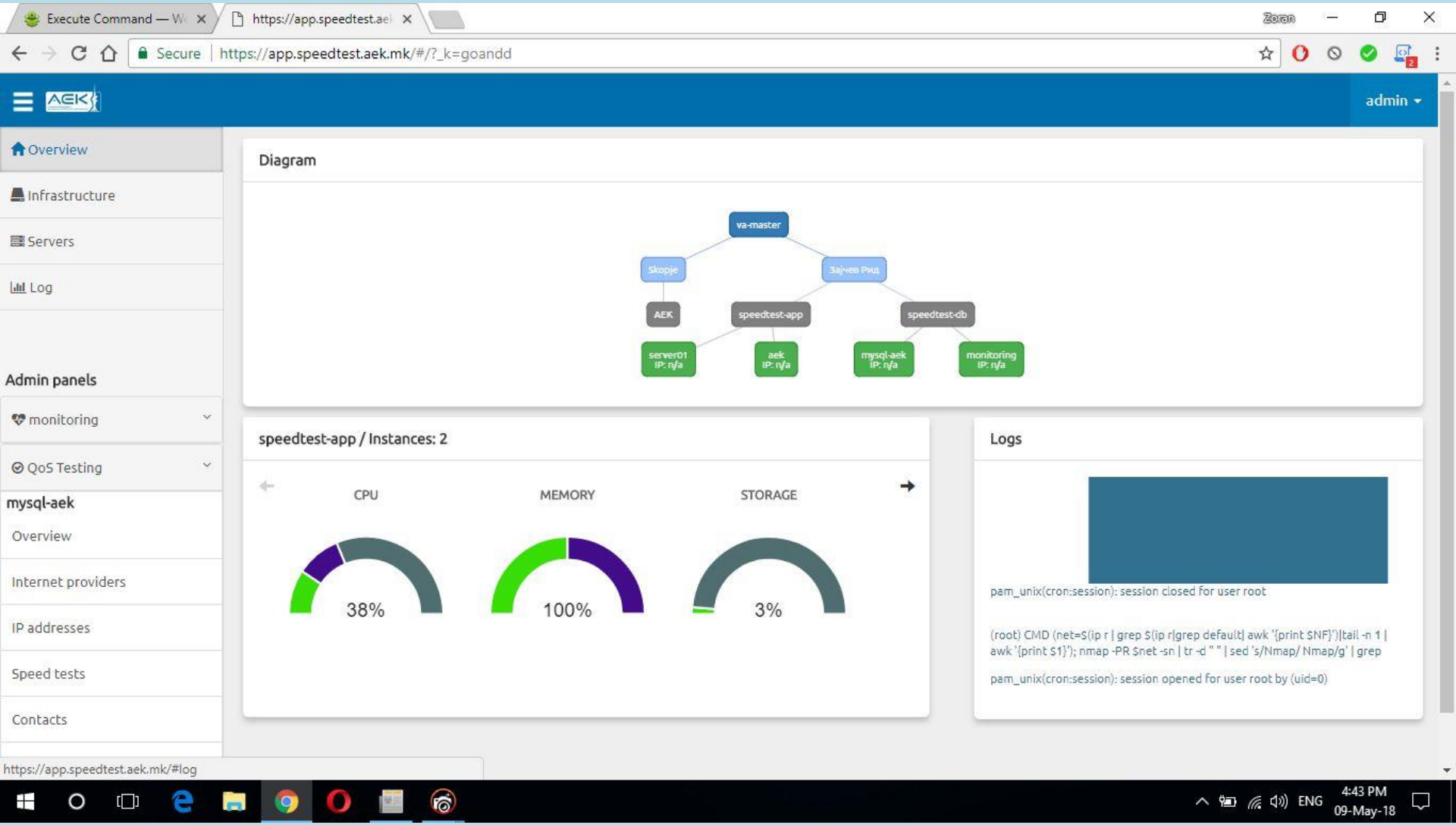
Probe Screenshot 3 – Speedtest Start (Entering parameters from the contract)



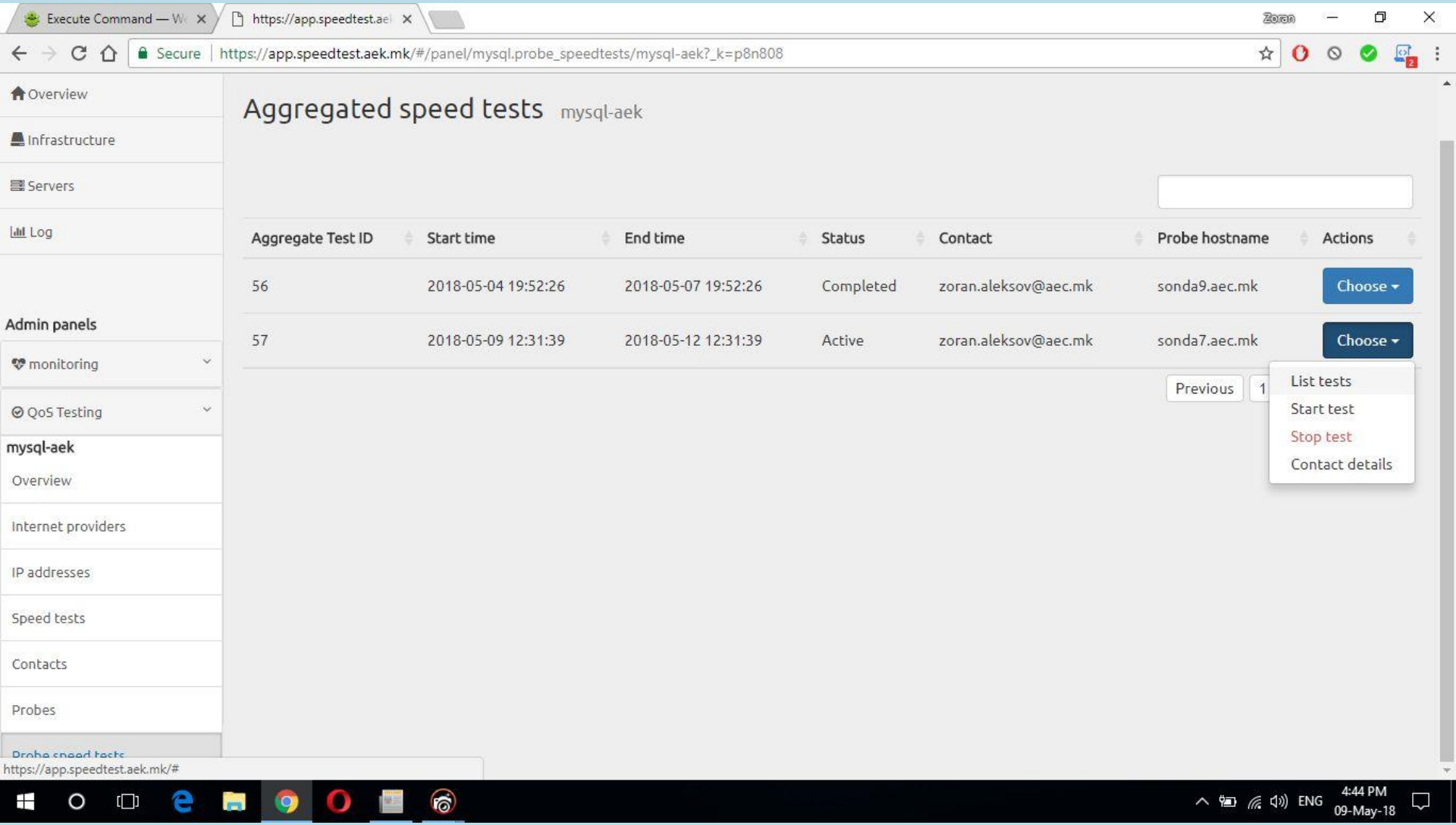
Probe Screenshot 4 – Speedtest Status



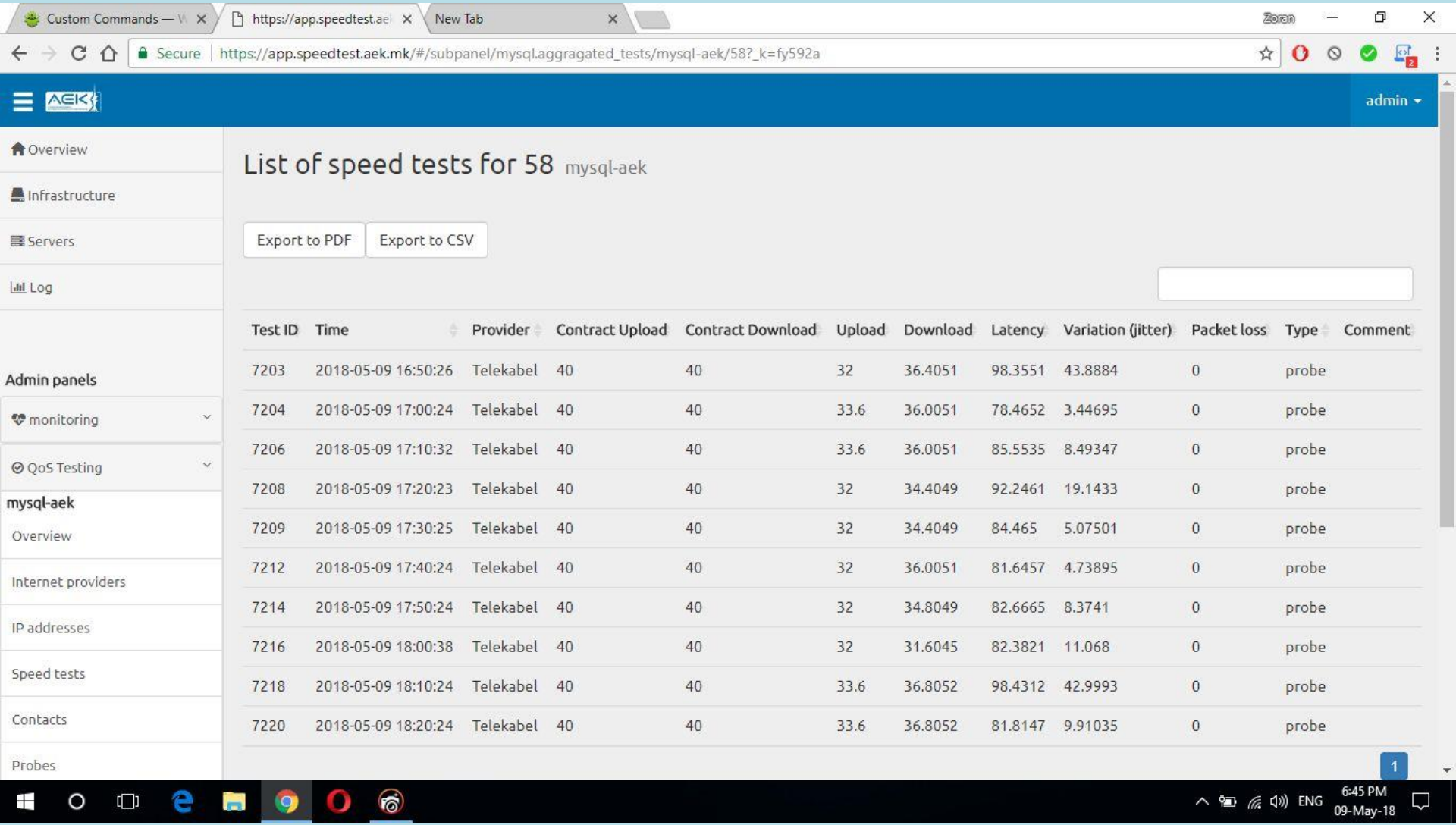
Mngmt App – Main Panel



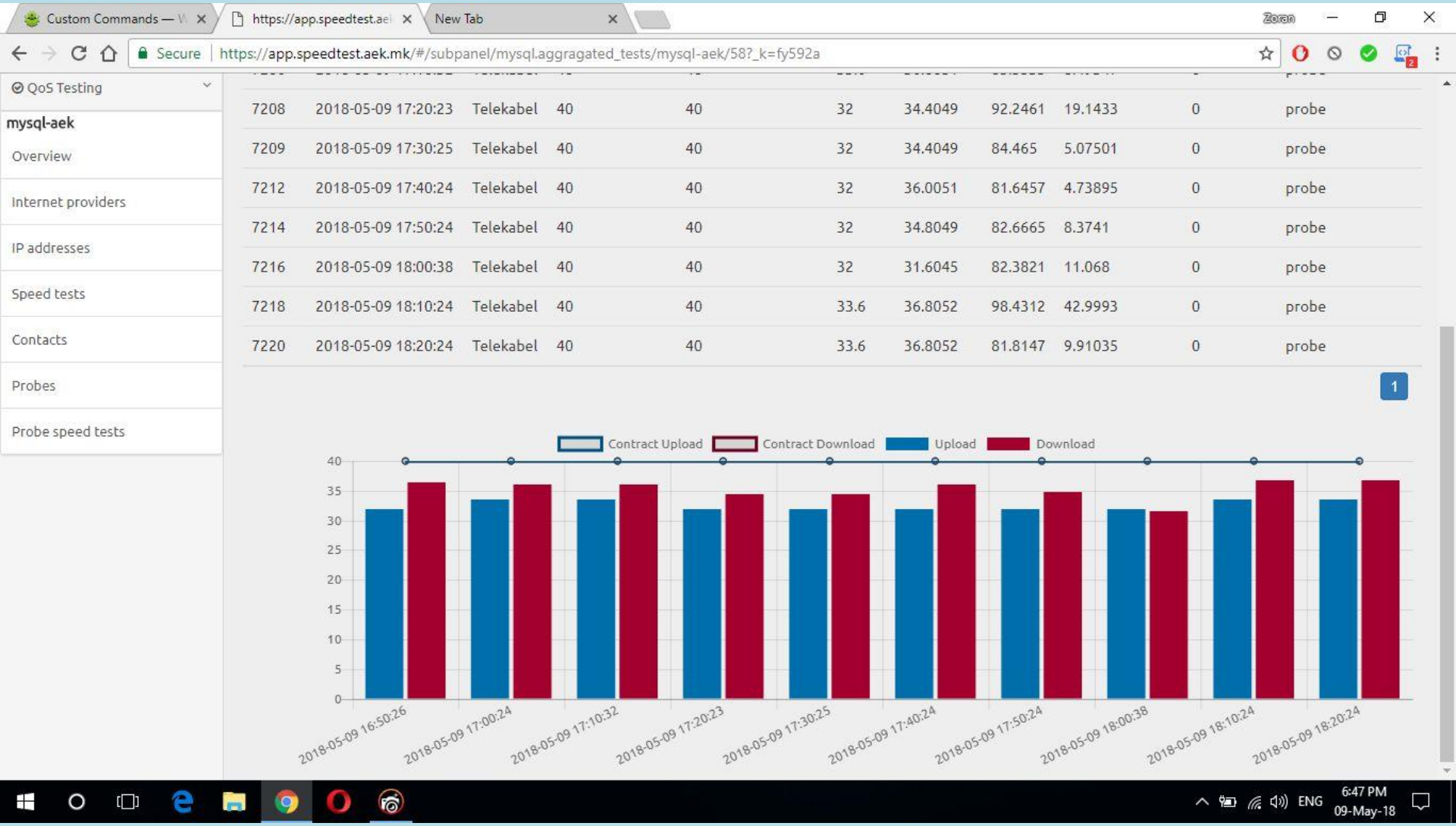
Mngmt App – Admin panels > QoS Testing > Probe Speed Tests



Mngmt App – List of speed tests *(a)*



Mngmt App – List of speed tests *(b)*



Final Report

ИЗВЕШТАЈ ЗА ИЗВРШЕНО МЕРЕЊЕ НА КВАЛИТЕТ НА ИНТЕРНЕТ ВО ФИКСНА МРЕЖА

Оператор: Telekabel

Период на мерење		
	Од	2018-05-02 22:00:24
	До	2018-05-04 08:30:23

Број на мерења	138

Параметри на мерењето	Договорна брзина	
	Upload	Download
	40	40

ИЗМЕРЕНИ ВРЕДНОСТИ:

	Upload	Download	Доцнење	Вар. на доц.
Максимално измерено	46.400	36.805	537.857	464.713
Минимално измерено	19.200	23.603	74.981	2.733
Просечни вредности	41.797	35.057	83.349	12.140
Медијана	44.800	36.005	76.204	3.385

Услов 1: Над 95% од мерењата да се со измерена брзина поголема од половина од договорната.

Број на измерени вредности над 50% од договорната брзина	137	138
Број на измерени вредности под 50% од договорната брзина	1	0
Исполнетост на услов 1:	99%	100%

Услов 2. Над 50% од мерењата да се со измерена брзина поголема од 75% од договорната

Број на измерени вредности над 75% од договорната брзина	130	130
Број на измерени вредности под 75% од договорната брзина	8	8
Исполнетост на услов 2:	94%	94%

Услов 3. Над 20% од мерењата да се со измерена брзина поголема од 90% од договорната

Број на измерени вредности над 90% од договорната брзина	118	84
Број на измерени вредности под 90% од договорната брзина	20	54
Исполнетост на услов 3:	86%	61%

Final Report

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UPLOAD - Вообичаена достапност

	Од (Mbps)	До (Mbps)	појавувања	процент
0-10 %	0.000	4.000	0	0.00%
10-20 %	4.001	8.000	0	0.00%
20-30 %	8.001	12.000	0	0.00%
30-40 %	12.001	16.000	1	0.96%
40-50 %	16.001	20.000	3	2.88%
50-60 %	20.001	24.000	4	3.85%
60-70 %	24.001	28.000	2	1.92%
70-80 %	28.001	32.000	58	55.77%
80-90 %	32.001	36.000	36	34.62%
90-100 %	36.001	40.000	0	0.00%

DOWNLOAD - Вообичаена достапност

	Од (Mbps)	До (Mbps)	појавувања	процент
0-10 %	0.000	4.000	1	0.96%
10-20 %	4.001	8.000	0	0.00%
20-30 %	8.001	12.000	0	0.00%
30-40 %	12.001	16.000	1	0.96%
40-50 %	16.001	20.000	2	1.92%
50-60 %	20.001	24.000	2	1.92%
60-70 %	24.001	28.000	6	5.77%
70-80 %	28.001	32.000	3	2.88%
80-90 %	32.001	36.000	48	46.15%
90-100 %	36.001	40.000	41	39.42%

THANK YOU!

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