

# Key performance indicators show the impact of spatial web services

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# Introduction

- The impact of spatial web services is difficult to show
  - Who uses the spatial web services?
  - Which spatial data is most used?
  - What are the benefits for the users?
  - What are the benefits for the service provider?
- Key Performance Indicators (KPI) show the benefits
- Case studies:
  - National Land Survey of Finland
  - Finnish Transport Agency
  - Finnish Environment Institute, SYKE



# Spatineo Monitor analyses users & usage and quality of spatial web services

1113 services followed Organize..
Overview & reports
Monitoring & usage
Performance testing

**Spatineo Monitor**

SYKE

- INSPIRE\_SYKE\_Geologia**  
WMS 1.3.0  
Pohjavesialue (EPSG:3067, 256x256...)  
Pohjavesialuerajat (EPSG:3067, 256...
- INSPIRE\_SYKE\_Ortoilmakuvat**  
WMS 1.3.0  
Image2000mosaiikki (EPSG:3067, 25...)  
Image2006mosaiikki (EPSG:3067, 25...)  
Image2012mosaiikki (EPSG:3067, 25...
- SYKE\_SCA2012**  
WMS 1.3.0  
116 (EPSG:4326, 256x256px, image/...
- SYKE\_SWE2011**  
WMS 1.3.0  
0 (CRS:84, 256x256px, image/png, G...
- Kaukokartoitus\_SYKE\_SCA2011**  
WMS 1.3.0  
0 (CRS:84, 256x256px, image/png, G...
- Kaukokartoitus\_SWE2011**  
WMS 1.3.0
- [no title #1572]  
WMS 1.3.0  
geo:NaturaKohde (EPSG:2393, 256x...)  
geo:NaturaKohde (CRS:84, 256x256...

Search for a service

**Service: INSPIRE\_SYKE\_Geologia #53**  
[http://paikkatieto.ymparisto.fi/arcgis/services/INSPIRE/SYKE\\_Geologia/MapServer/WmsServer](http://paikkatieto.ymparisto.fi/arcgis/services/INSPIRE/SYKE_Geologia/MapServer/WmsServer) [Spatineo Directory page](#)

Assigned to service groups: SYKE [Edit groups](#) Stop following s

Service info
Standards compliance
Usage analytics
Meters & alerts
Sharing

Period: 1/1/2015 - 12/31/2015 Zoom out Last day Last week Last month

**By segment**

Organization/ISP	Addresses	Requests ↑	Avg req. ms
inet.fi	1,619	1,743,496	182
dnainternet.fi	773	1,110,771	144
kotinet.com	14	902,554	145
ramboll.fi	1	783,770	77
scansafe.net	3	615,688	92
destia.fi	1	577,376	101
elisa-mobile.fi	953	568,177	210
elisa-laajakaista.fi	643	538,505	165
194.89.193.x	1	484,877	161
pohjoiskarjala.net	12	477,186	71
Download	6,161	16,756,161	134

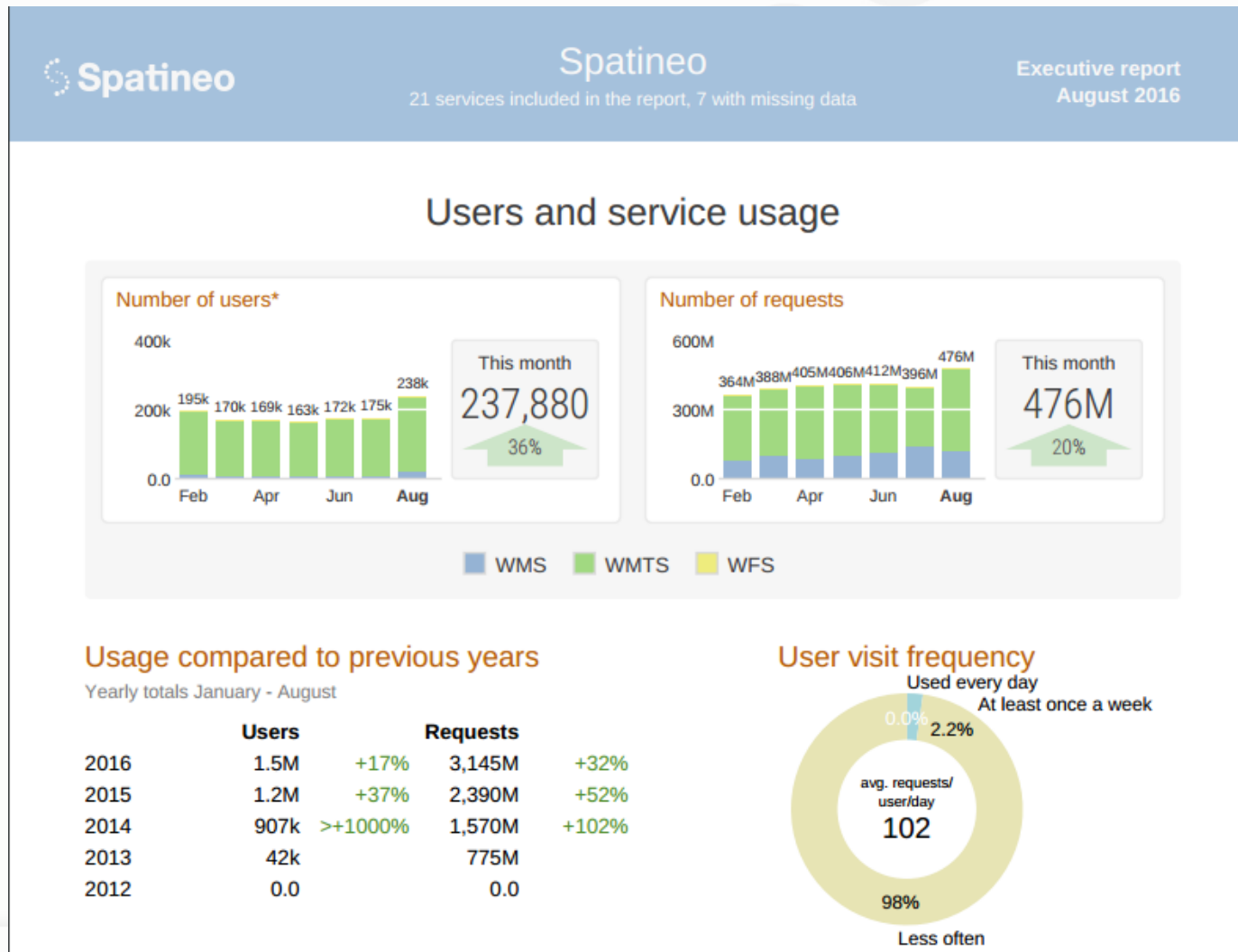
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Time
User location
Request area

# Executive reports show the most important KPIs of spatial web services

- Number of users of services
- Number of requests to services
- Usage compared to previous years
- Most popular data sets
- Top origins for service requests
- Service availability
- User impact of service speed improvement
- Most used services
- Services with biggest speed changes

# NLS of Finland opened all its topographic data freely available 1<sup>st</sup> of May 2012



# NLS's Background and Topographic maps were most used data layers in August 2016

Confidential

## Most popular data sets

Name		Requests	Users	Service Type	Service ID
Taustakartta	Background map series	92M	92k	WMTS	#12048
Maastokartta	Topographic map	78M	75k	WMTS	#12048
Kiinteistöjaotus	Real property units	67M	65k	WMTS	#12047

Most requests by layer name / feature type

## Trending data sets

Name	Users	change	Requests	Service Type	Service ID
Rekisteriyksikön tietoja	3	+200%	5	WFS	#13453
Yleiskarttarasteri 1:2 milj	8.7k	+168%	181k	WMS	#3659
Maastokarttarasteri 1:500 000	16k	+135%	1.2M	WMS	#3659

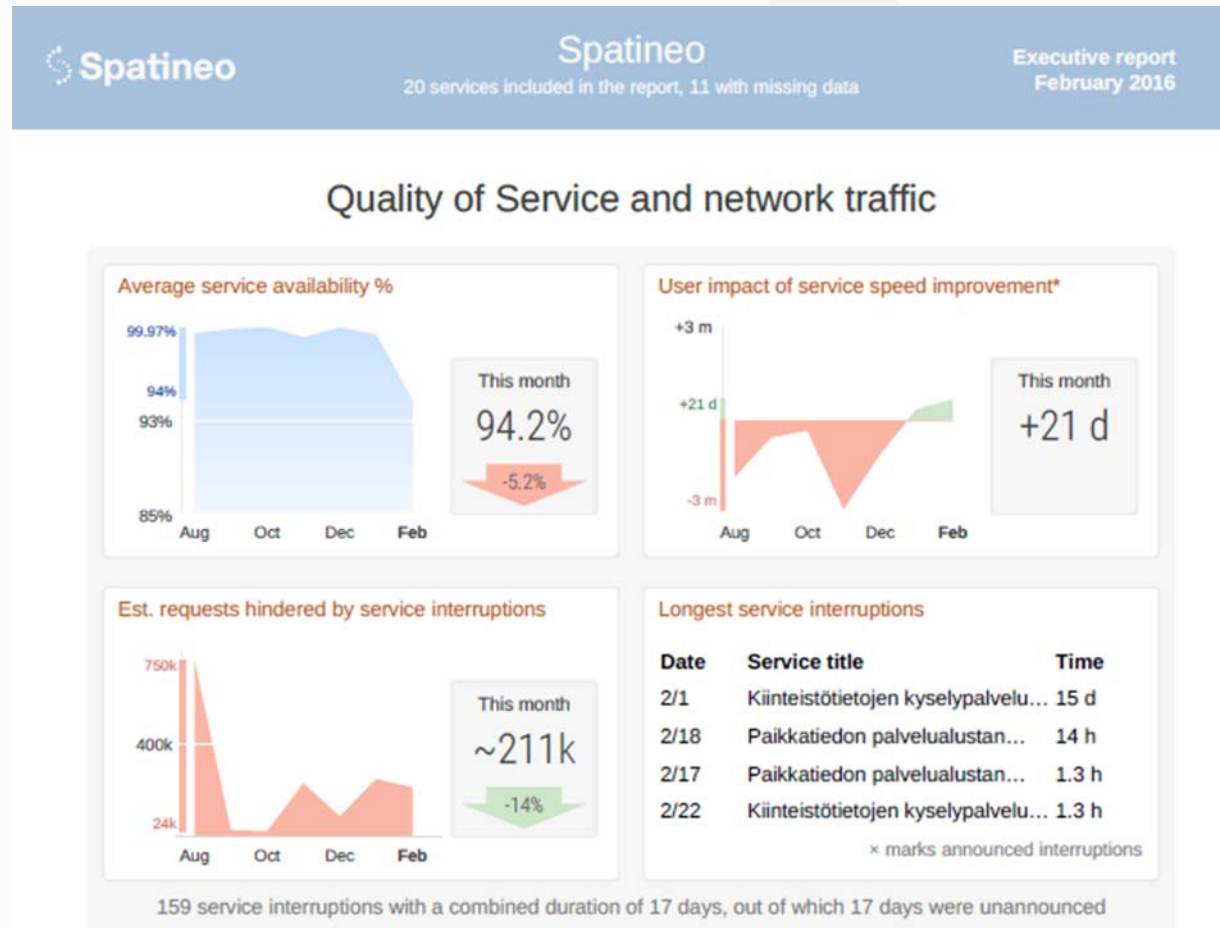
Biggest consecutive increase in user base in last three months, by layer name / feature type

## Top origins for service requests

Referring site	Total users	Number of requests			Total
		WMS	WMTS	WFS	
www.paikkatietoikkuna.fi	76k	925	146M	0.0	146M
kiinteistotietopalvelu.maanmittau...	6.8k	0.0	69M	0.0	69M
hkp.maanmittauslaitos.fi	18k	0.0	8.0M	0.0	8.0M

Requests from an unknown origin not included

# Users of services of NLS saved totally 21 days of working time in one month

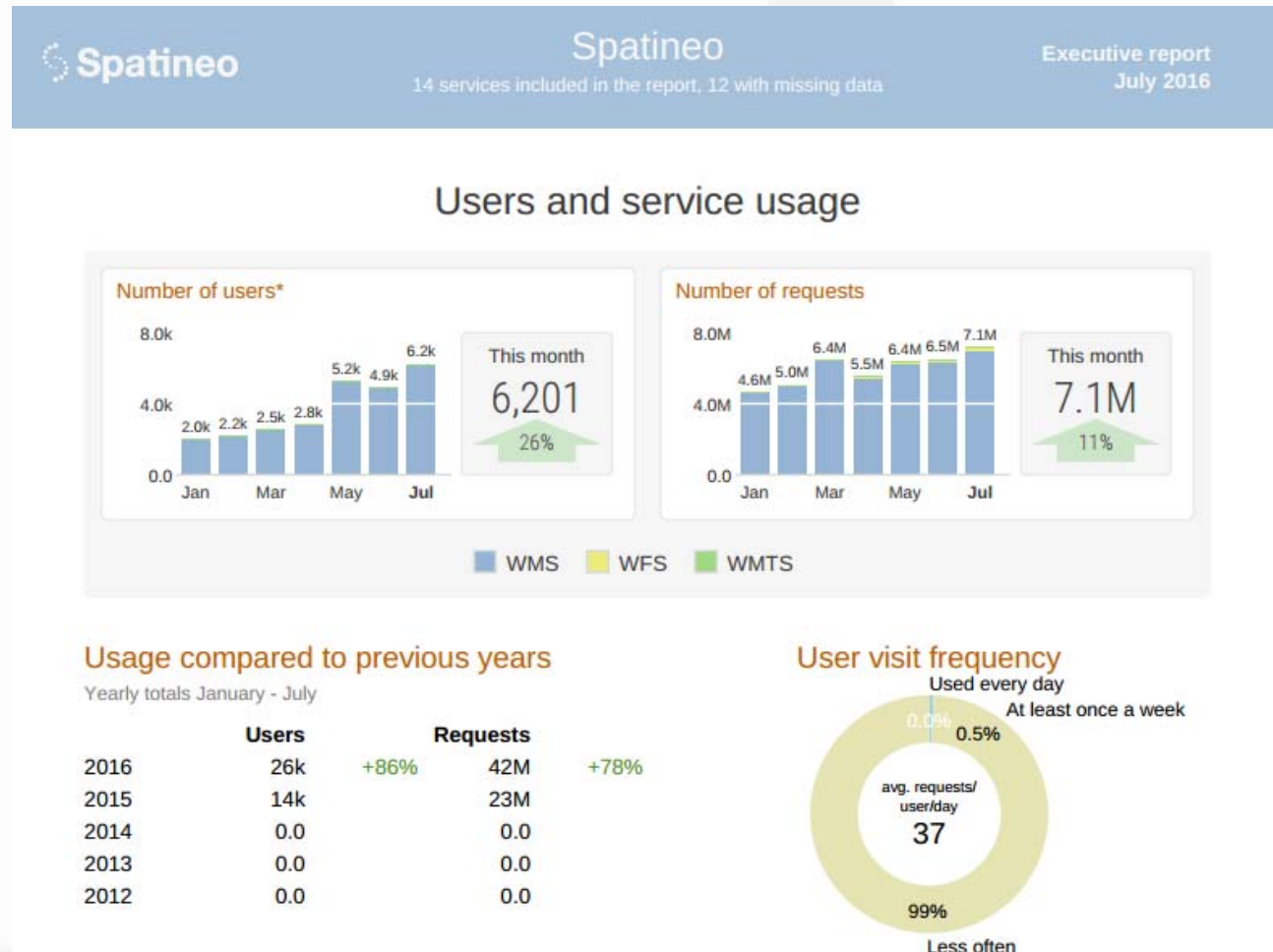


\*) Difference from the latest six-month average response time multiplied by the monthly request count for all included services



# Finnish Transport Agency's open data sets include information on roads, railways and waterways

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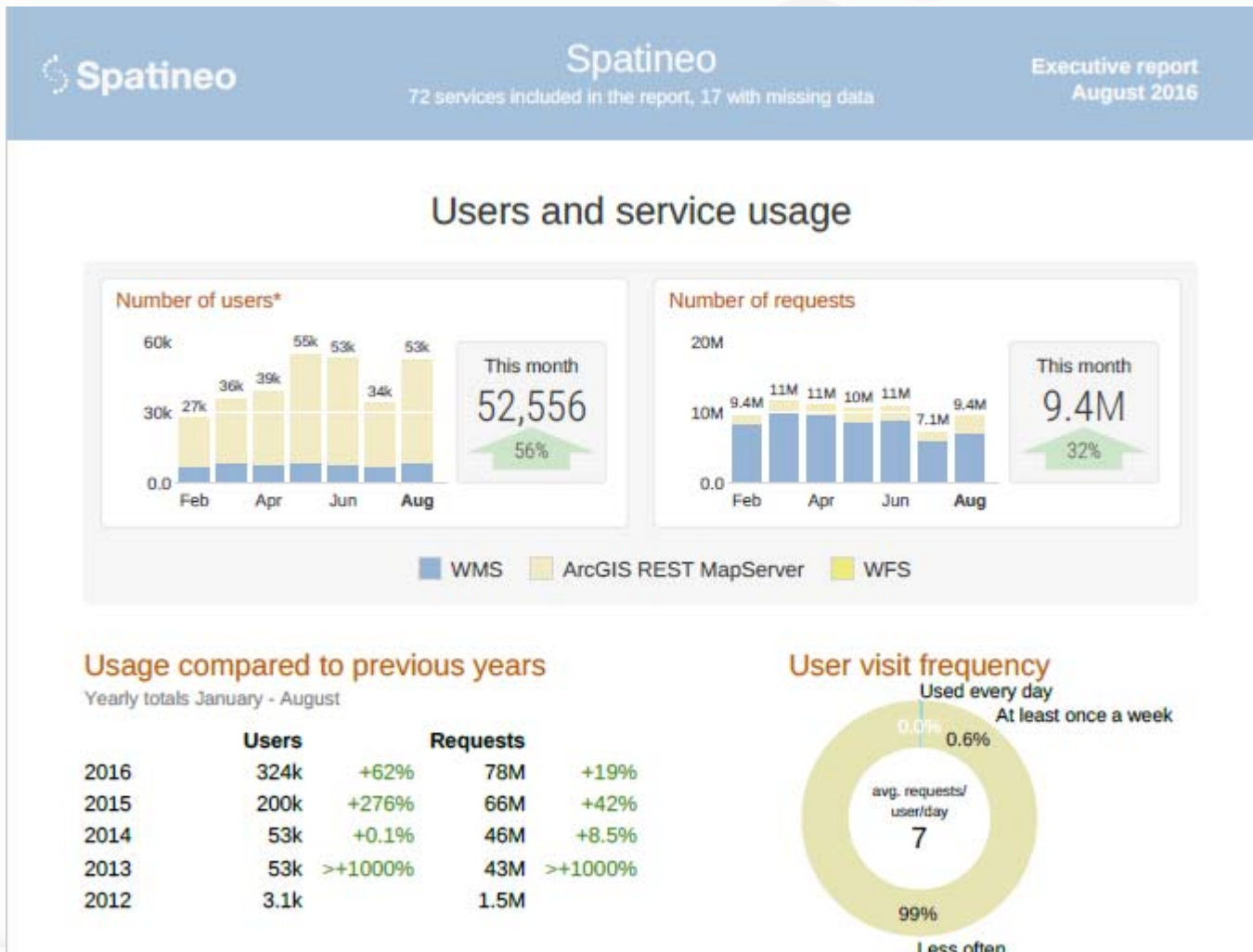
# Goals of the Finnish Environment Institute, SYKE

- To guarantee the best possible availability of spatial web services for users
- To increase the internal use of spatial web services
- To enhance the awareness of external users of SYKE's open spatial web services
- To show the economical benefits of the services

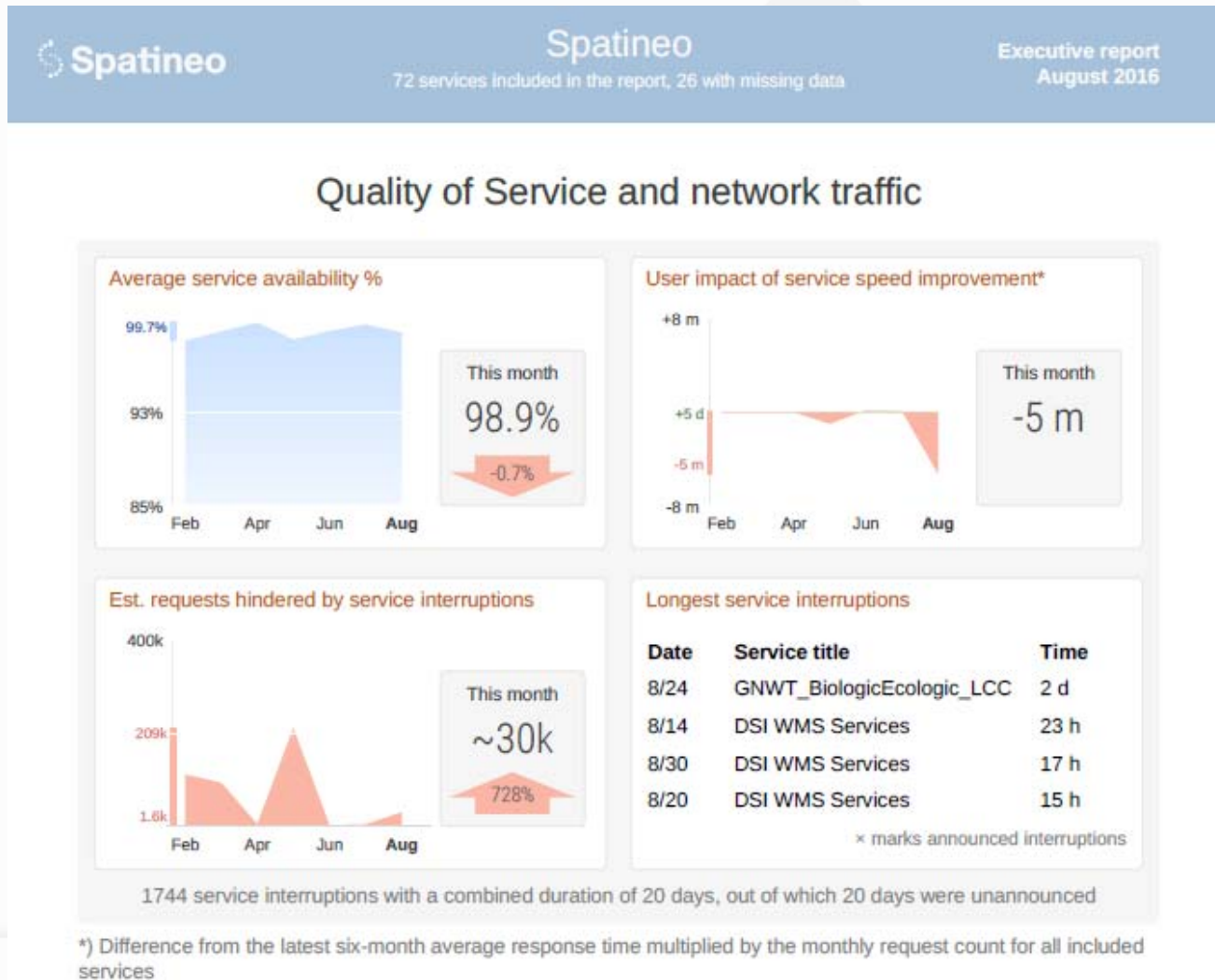


# SYKE opened all its environmental data freely available 2008

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# The huge popularity of one service of SYKE influenced on users of all services



\*) Difference from the latest six-month average response time multiplied by the monthly request count for all included services

# A huge popularity of one service of SYKE influenced on users of all services

## Most used services

Service title	Requests	Users	Transfer	Type	Service ID
INSPIRE_SYKE_Korkeus	2.5M	3.6k	1.4 GiB	WMS	#119
INSPIRE_SYKE_Geologia	1.6M	871	1.3 GiB	WMS	#53
Vesikartta pintavedet	1.5M	23k	47 GiB	ArcGIS...	#40786

## Services with the biggest speed changes

Service title	Response time		No. of users	
		Change		Change
AlueidenHallintaJaRajoitukset2	2 sec	+973%	134	-69%
LajienLevinneisyys2	2 sec	+955%	17	+55%
ElinymparistotJaBiotoopit	2 sec	+954%	9	-61%

Compared to Jul 2016

## Services with the biggest error rates

Service title	Error %		No. of users	
		Change		Change
DSI WMS Services	24.96	+35%		
GNWT_BiologicEcologic_LCC	7.62	>+1000%		
[no title #32057]	1.21	>+1000%	151	+31%

in responses to availability monitoring requests

# Return-On-Investment calculator gets facts from Spatineo Monitor

- SYKE has dozens of spatial web services
- ROI calculation shows both the direct and indirect cost savings of internal and external use of the services
- Case: [INSPIRE\\_SYKE\\_Hydrografia service](#)

# Conclusion

- Reliable and useful KPIs are based on information that is diverse and objective and measured continuously.