

An overview of
the Internet Infrastructure in Greece

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What is “Internet Infrastructure”?

- Cables & fibre
- Datacenters & colocation facilities
- Internet Exchanges



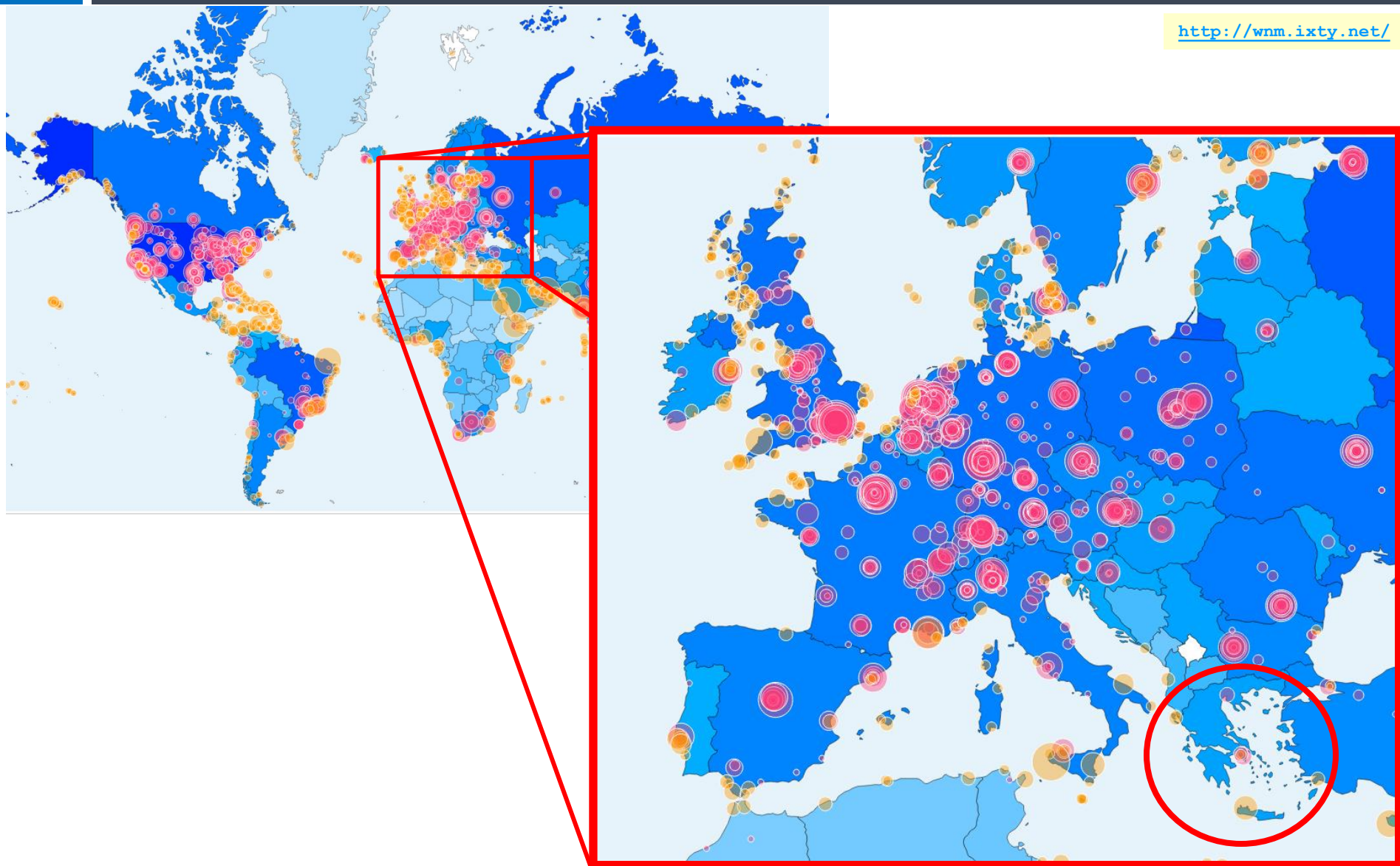
DISCLAIMER:

Most of the data about fibres/cables presented here, although not confidential, is not publicly available. It was collected unofficially, it was hard to cross-check and it may be inaccurate or incomplete.



World, Europe, Greece

<http://wnm.ixty.net/>



International & backbone fibre

Vestitel (2x)

To: Sofia (BG)

Landing: Thessaloniki (Synapsecom, Vodafone)

Used by CYTA, Vodafone, TIS, OTEGLOBE,...

OTEGLOBE

1. GR-IT (2x)

Landing: Corfu (OTE)

2. GR-ALB

CBF: Krystallopigi

3. GR-BG

CBF: Thessaloniki
(+leased DF, Vestitel)

4. GR-TUR

(with Turk telecom)
Landing: ???

5. GR-LBY

Landing: Chania

6. SeeMeWe

Landing: Chania

7. AAE-1

Landing: Chania

8. GR-MK?

(cosmote?)

GR Network

Extended (leased DF & capacity from OTE)

Vodafone

1. GR-ALB

CBF: Sagiades

2. AAE-1 (?)

Landing: Chania

GR Network

ATH-THES,
West GR, ...

SeeMeWe-3

To: Europe, Asia, Africa, Oceania.

Partners include: OTEGLOBE, PCCW

Landing: Chania (OTE)

AAE-1

To: Europe, Asia, Africa.

Partners include: OTEGLOBE, PCCW, CYTA, Vodafone

Landing: Chania (OTE)



CYTA

1. GR-BG

(Leased DF, Vestitel)

2. GR-MK

(with NEOTEL)

CBF: Kipi

3. GR-ALB

CBF : Krystallopigi

4. CY (CYTA GLOBAL)

(Leased DF, Mednautilus)
Landing: Athens, Chania

GR Network :

West GR

+capacity ATH-THES, ATH-CHA

Telecom Italia Sparkle

1. Mednautilus cabling system

To: Catania(IT), Chania & Athens (GR), Tel Aviv & Haifa (ISR), Pentaschinos (CY), Istanbul (TUR)
Landing: Chania (TIS), Athens(TIS)

2. GR-BG-TUR

leased DF/capacity

GR Network:

Leased DF: West GR
(+ capacity ATH-THES)

Forthnet

GR-BG(-TUR?):

CBF: Serres (Vestitel?),
Orestiada

GR Network

Extended DF in mainland
(ATH-THES, West GR,
Peloponissos)

WIND

1. GR-ALB-IT

Landing: Corfu/Aetos

GR Network

DF: ATH-THES, West GR,
Peloponissos, Argos-
Chania

Datacentres/Colocation Facilities

- Athens (capital)
 - “Neutral”, commercial facilities
 - AthensExchange
 - LamdaHellix
 - Lancom
 - Telecom Italia Sparkle
 - Synapsecom
 - + a few ISP/private DCs
 - Forthnet
 - ...
- Thessaloniki (2nd largest)
 - “Neutral”, commercial facilities
 - Lancom
 - Interworks
 - Synapsecom
 - + ISP DCs
- Chania (submarine landing)
 - “Neutral”, commercial facilities
 - Telecom Italia Sparkle
 - + ISP DCs



Internet Exchanges

- GR-IX, the only IXP in Greece
 - ▣ At least, with the traditional sense
 - ▣ Connecting practically all Greek eyeballs and content
- 3 PoPs in Athens
- Neutral, non-profit
- Size:
 - ▣ 33 members
 - ▣ ~70Gbps daily peaks
 - 85Gbps max



CONNECT. PEER. EXPAND.

Cloudflare	EETT	Riot Games
Connecticore	HostMeln	Top.Host
CYNET	Lamda Hellix	skroutz
Cyta (Cyprus)	inalan	Synapsecom
Cyta Hellas	Microbase	verizon
dataways	Microsoft	Vodafone
ERT	modulus	WIND
forthnet	NetIX	AS112
GR-IX	O3bNetworks	FORTH
GRNET	OTE	RIPE
HCN	TI Sparkle Greece	Verisign IRS

Summary of Infrastructure

- Cross-Border fibre/submarine cables
 - ▣ Cables are controlled by relatively small number of players
 - EG: BG->2, IT->3, TUR->2
- GR Backbone fibre is relatively limited
 - ▣ Eg, Athens-Thessaloniki
- Prices are quite high (even within GR)
 - ▣ Oligopoly or lack of customers?
 - ▣ Situation has improved during the last couple of years
- No large datacenters outside of Athens
- Only one Internet Exchange

→Can we take advantage of the BG grow??

Quality of Greek Internet

□ IRRDB quality

- ▣ Well maintained RIPE data
- ▣ Well maintained AS-SETs
- ▣ Advertised prefixes are covered by route objects
 - exact matching

Significant AIX/GR-IX contribution in this...



□ ROAs/RPKI



□ PeeringDB

- ▣ Not very popular in Greece



□ MANRS



□ IPv6 adoption

- ▣ Eyeballs
- ▣ Content



* Ratings are relative (compared to other countries/regions)

** Ratings based on subjective personal experience and instinct

IPv6 grow

IPv6 Users by Country

Source: LACNIC

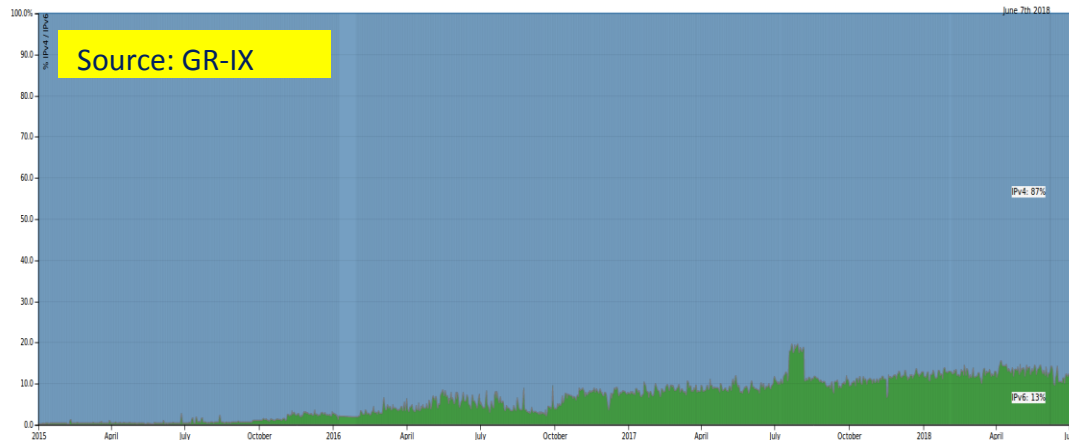
Date: 12 Jun 2018

Index	ISO-3166 Code	Internet Users	V6 Use ratio	V6 Users (Est)	Population	Country
1	BE	10176188	57.90	5891789	11498518	Belgium
2	IN	471210045	52.00	245009756	1354051854	India
3	DE	72418242	42.02	30428717	82293457	Germany
4	US	289188571	40.85	118131326	326766748	United States of America
5	GR	7220120	37.22	2687304	11142161	Greece
6	CH	7450397	34.16	2544768	8544034	Switzerland
7	LU	561985	32.98	185328	590321	Luxembourg

State of the Internet IPv6 Adoption Visualization

Source: AKAMAI

RANK	IPv6 %	COUNTRY
1	46.4%	Belgium
2	40.4%	United States of America
3	36.6%	India
4	32.2%	Greece
5	25.5%	Germany
6	21.7%	Luxembourg
7	20.8%	Switzerland
8	20.7%	Finland
9	19.8%	Brazil
10	18.7%	Canada



Internet Communities in Greece



Thank you!

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