IETF
Making the Internet Work Better

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Internet Engineering Task Force

- Development of open, consensus-based Internet standards

- The mission of the IETF is to produce high quality, relevant technical and engineering documents that influence the way people design, use, and manage the Internet in such a way as to make the Internet work better. These documents include protocol standards, best current practices, and informational documents of various kinds. [RFC 3935]

Internet Engineering Task Force

- Разработка открытых стандартов Интернета на основе консенсуса

- Миссией IETF является создание инженерно-технических спецификаций высокого качества, с помощью которых проектирование, использование и управление Интернетом делает его работу еще лучше. Эти спецификации включают стандарты протоколов, описание лучшей текущей практики, а также информационные документы различного рода. [RFC 3935]

IETF standards make the Internet work

- TCP/IP
  - IPv4 (RFC791) and IPv6 (RFC2460...)
  - TCP (RFC675...) and UDP (RFC768)
- E-Mail
  - SMTP (RFC5321)
- Network and Routing
  - MPLS (RFC3031) and BGP (RFC4271)
- ...

- DNS (RFC1034,1035...)
- Web
  - HTTP (RFC2616...)
- VoIP
  - SIP (RFC3261...) and RTP (RFC3550...)
- ...

How the IETF works

- **High-quality standards**
  - Experts, not organisations
  - Open and consensus based

- **Areas and Working Groups**
  - Mailinglists with open membership
  - Most of the work is done on-line
  - 3 face-to-face meetings with remote participation

- **Working specifications and standards freely available**

- **Maintenance responsibility**
  - Standards track

Standards process
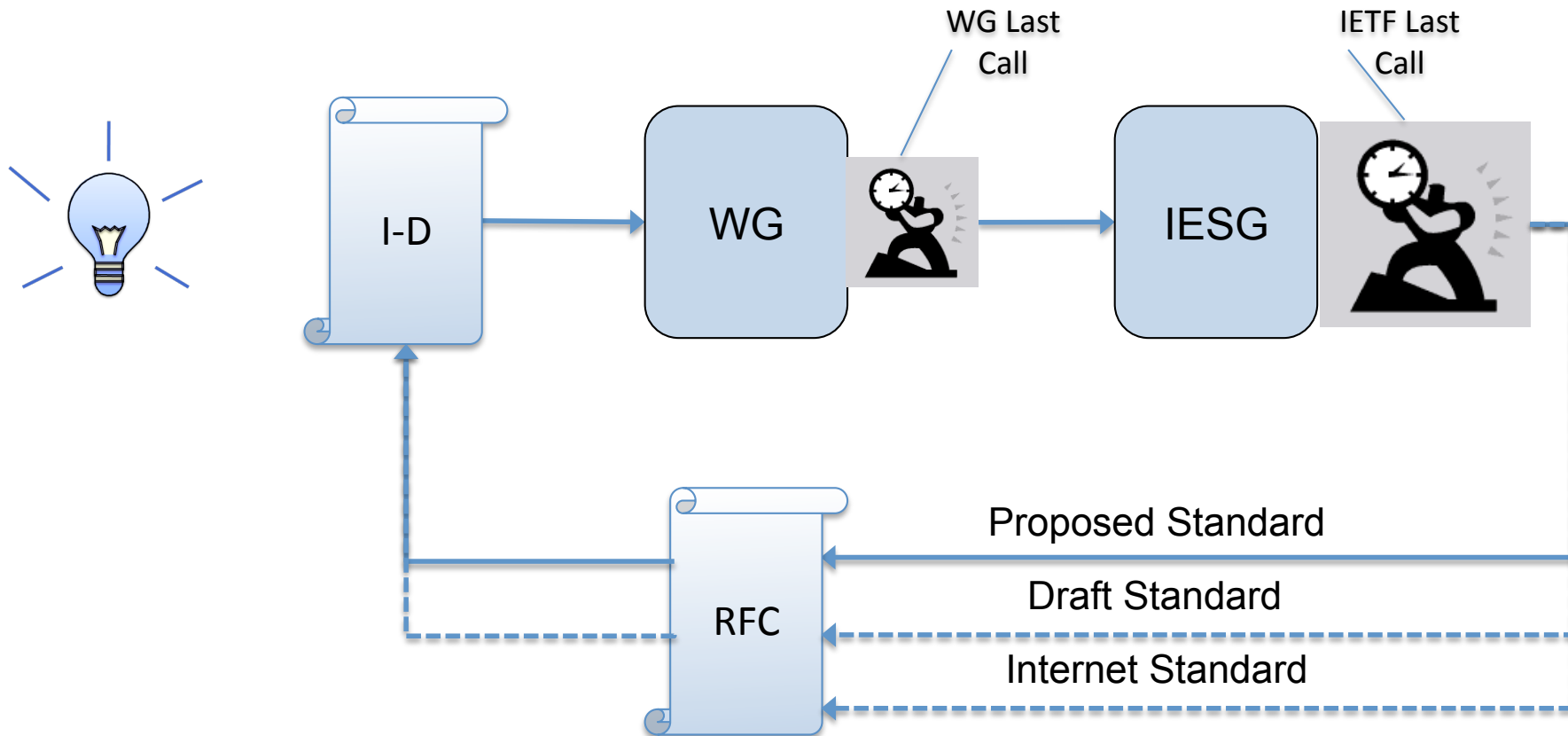
IETF at a glance

- 1000-2000 people at 3 meetings/year
  - From 40-50 different countries
  - Many, many more on mailing lists

- ~120 Working Groups (WGs)
  - ~2 WG chairs each

- 8 Areas with 15 Area Directors (ADs)

- More than 5500 RFCs published
  - Internet Standards and informational documents

- More than 50000 Internet Draft revisions submitted

US   JP   CN
FR   NL   DE
UK   FI   Others
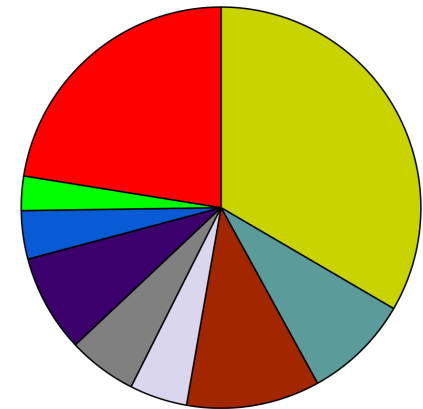
Participants at IETF-78
Maastricht, July 2010
1153 total, 53 countries

Areas and WGs

IETF®

Internet Architecture Board (IAB)

Internet Research Task Force

asrg	alto	behave	dkim	bfd	adslmib	avt	16ng
cfrg	calsify	dccp	emu	ccamp	bmwg	bliss	6lowpan
dtnrg	core	fecframe	hokey	forces	dime	codec	6man
hiprg	decade	ippm	ipsecme	idr	dnsop	dispatch	ancp
iccrg	eai	ledbat	isms	isis	grow	drinks	autoconf
mobopts	httpbis	mptcp	keyprov	karp	ipfix	ecrit	csi
nmrg	httpstate	nfsv4	kitten	l2vpn	mboned	enum	dhc
p2prg	hybi	nsis	krb-wg	l3vpn	netconf	geopriv	dnsext
pkng	iri	pcn	ltans	manet	netmod	martini	hip
rrg	marf	ppcp	msec	mpls	opsawg	mediactrl	intarea
samrg	morg	rmt	nea	ospf	opsec	mmusic	ipdvb
tmrg	oauth	storm	pkix	pce	pmol	p2psip	l2tpext
vnrg	sieve	tcpm	sasl	pim	radext	simple	lisp
	vcarddav	tsvwg	smime	pwe3	v6ops	sipclf	mext
	vwrap		syslog	roll		sipcore	mif
	yam		tls	rtgwg		siprec	mip4
				sidr		soc	mipshop
				vrrp		speechsc	multimob
						speermint	netext
						xcon	netlmm
						xmpp	ntp
							pppext
							savi
							shim6
							softwire
							tictoc
							trill

| Applications Area | Transport Area | Security Area | Routing Area | O&M Area | RAI Area | Internet Area | GENERAL AREA |

Internet Engineering Steering Group (IESG)
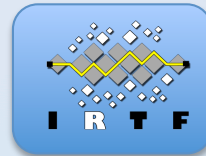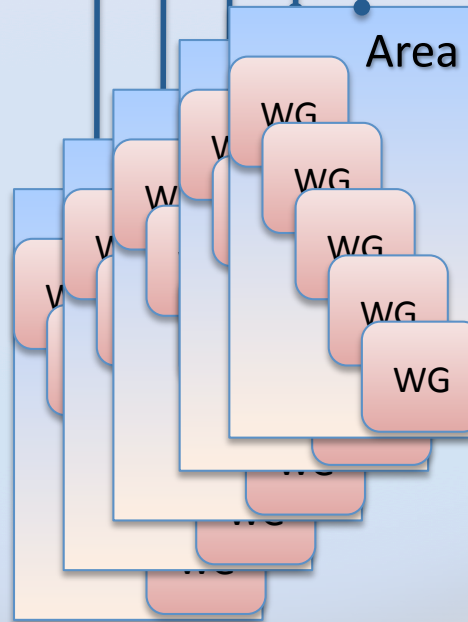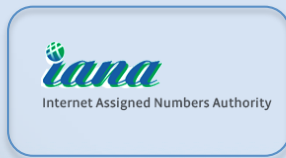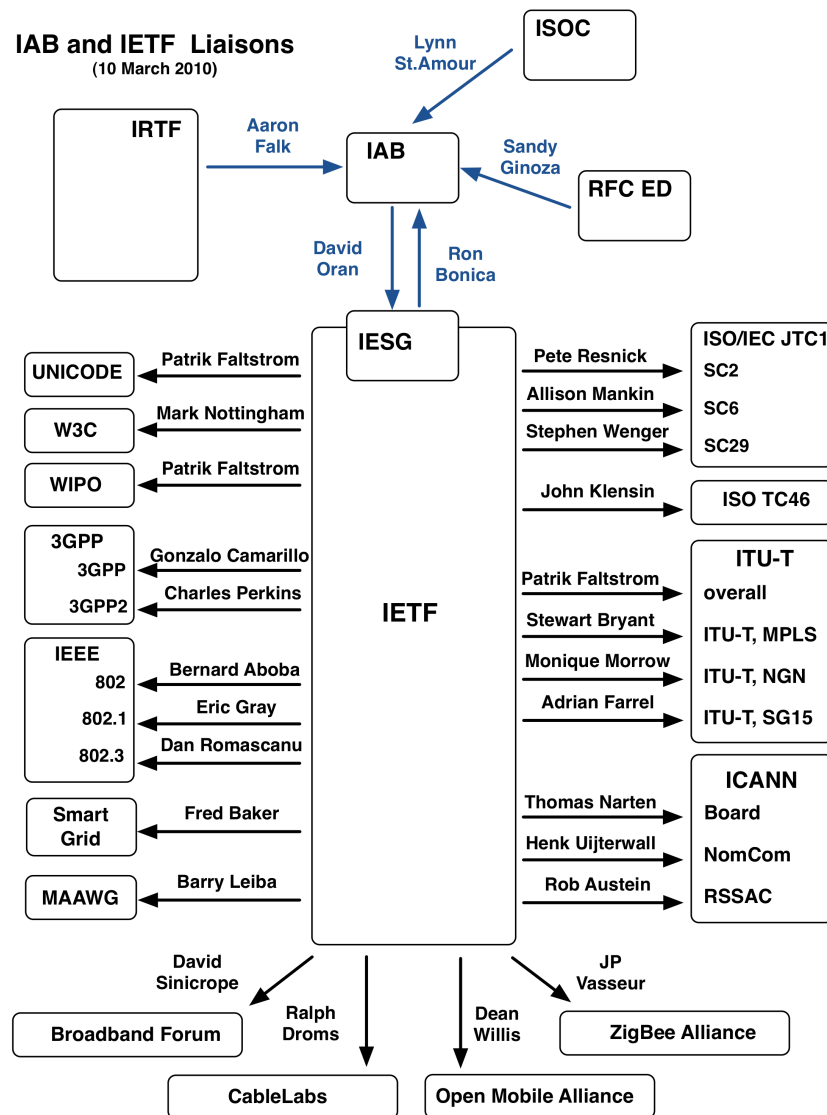
IETF and other organisations

IPv6 work in the IETF

- **behave**: Deals defines translation mechanisms to connect IPv4 to IPv6 networks
- **softwire**: Provides tunneling mechanisms to connect islands of address families (see RFC4925)
- **6man**: Fixes 'bugs' in the IPv6 specification
- **v6ops**: Operational guidance and more
- **savi**: improvement of validation of sources of IP traffic on a link (v4 and v6)
- **csi**: Reviewing secure neighbor discovery (SEND)

Routing Security

- **sidr**: Secure inter-domain routing
  - Define an extendable routing security framework
  - Use of resource certificates to improve security

- ROA - Route Origin Authorizations

- Integration with BGP decision process
  - A degree of preference for the route
    - "Valid"->"Unknown"->"Invalid"
  - SHOULD exclude "Invalid" routes
    - "Invalid" indicates a decision of the resource holder

Internationalisation (i18n)
Internationalised Domain Names

- First attempt 2003
  - **idn** WG - IDNA2003

- **idna**
  - IDNA2008 – approved 2010
  - extended repertoire of allowed characters
  - removed U-label – A-label mapping ambiguity
  - removed dependency on version of Unicode

- First Internationalised TLDs
  - .РФ, مصر ,.السعودية .,امارات ,. 中国, . 中國, . 香港, . 台灣, . 台湾

Internationalisation (i18n)
Email Address Internationalization
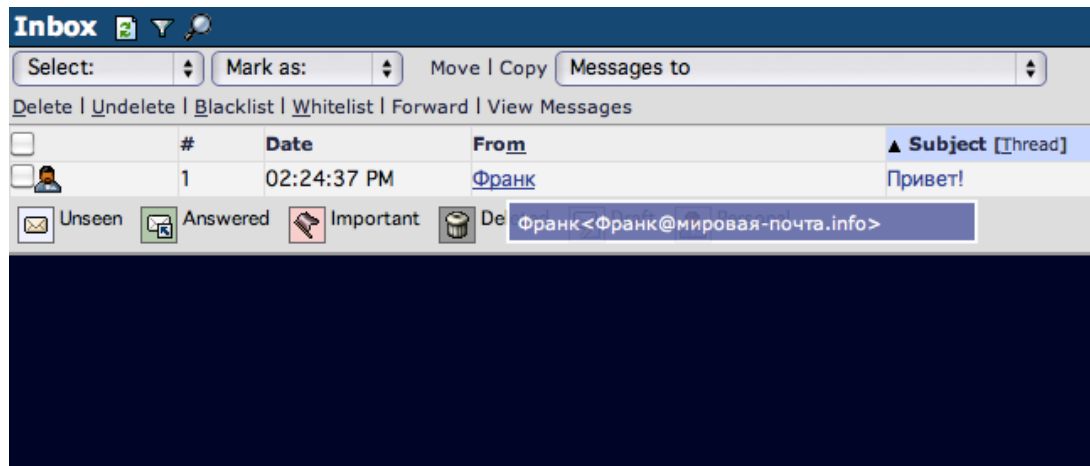
Internationalisation (i18n)
## Email Address Internationalization

- **eai**: first attempt
  - UTF-8 in local and domain parts (utf8@utf8)
  - New SMTP extension
  - In-transit downgrading for backwards compatibility
  - A series of experimental RFCs
- **eai:** rechartered at IETF-77 (March 2010)
  - standardise a simplified model
  - no fallback
  - finish before end 2011

Internationalisation (i18n)
Email Address Internationalization

- Tracking implementations
  - interop: CNNIC, JPRS, NIDA, TWNIC, Afilias

- Afilias global-mail prototype
  - http://global-email.info/

- ICANN's E-mail test
  - http://idn.icann.org/E-mail_test
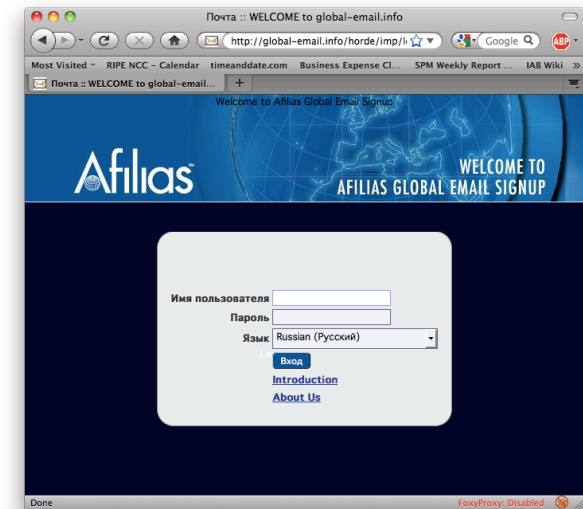
Summary

- IETF makes the Internet work better
  - Fundamental role in Internet administration
- Your participation is critical to the success of the IETF
  - International scope, local relevance
- Open, inclusive, well established structure
  - evolving together with the Internet
- More information
  - www.ietf.org

Thank You!