



**ITU KALEIDOSCOPE**

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*Challenges for a data-driven society*

# TASIS: Trend Analysis System for International Standards

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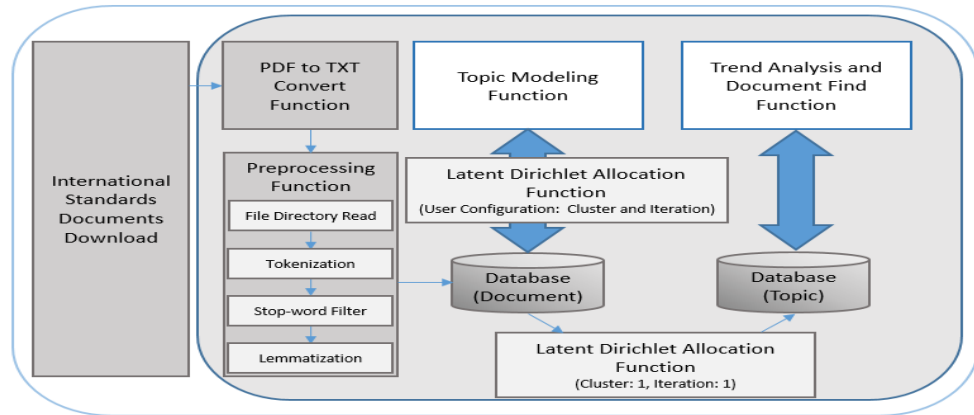




- Introduction

- We apply text mining to standard documents to better understand trend analysis and research trends.
- We have collected ITU-T Recommendations and examined topics by performing topic modeling experiments based on a latent dirichlet allocation (LDA) algorithm.
- We have developed the Trend Analysis System for International Standards (TASIS), which performs topic modeling and trend analysis automatically, making it possible to analyze trends at various points, in accordance with user requirements.

- System Architecture





**Topic Modeling Function / Trend Analysis Function**

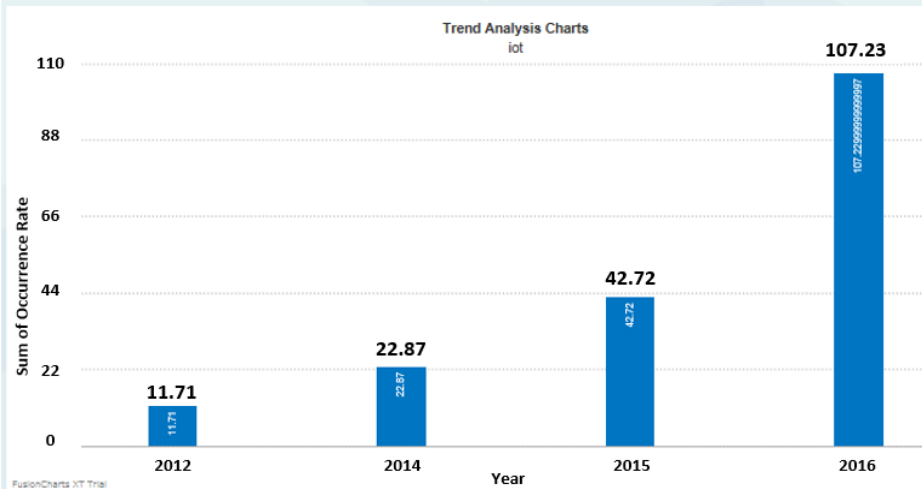
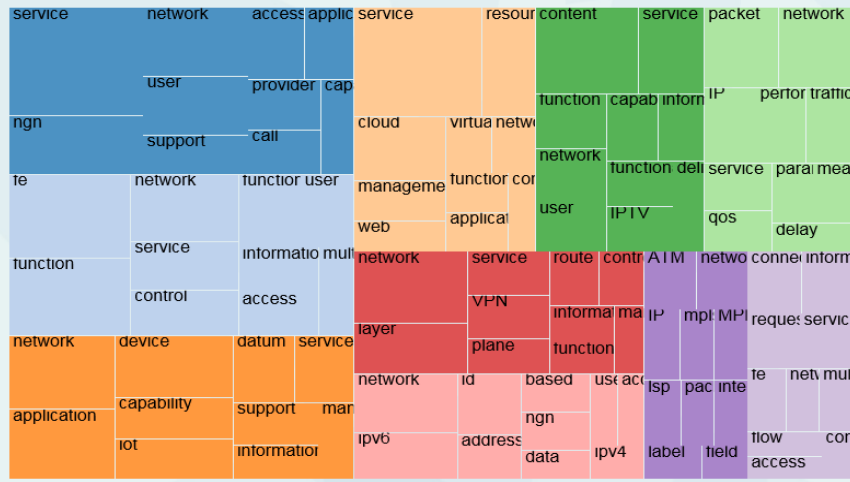
Y : Global information infrastructure, Internet protocol aspects and next-generation networks

Series = Y / Year\_From = 1997 / Year\_To = 2016 / Cluster = 10 / Iteration = 1000

Cluster Number (Topic Number)	Topics										
0	connection	information	request	service	fe	network	multi	flow	access	control	
1	service	ngn	network	user	support	access	application	provider	call	capability	
2	ATM	network	IP	mpls	MPLS	isp	packet	interwork	label	field	
3	network	application	device	capability	iot	datum	service	support	information	management	
4	service	resource	cloud	management	web	virtual	network	function	application	component	
5	network	ipv6	id	address	based	ngn	data	user	access	ipv4	
6	packet	network	IP	performance	traffic	service	qos	parameter	measurement	delay	
7	network	layer	service	VPN	plane	route	control	information	functional	management	
8	content	service	function	network	user	capability	information	functional	IPTV	delivery	
9	fe	function	network	service	control	functional	user	information	access	multicast	

# Tree Map #

\* Box Size = Cluster Size / Keyword Size = Word Count Size in Each Cluster



Document	Year	Occurrence Rate	Title
Y.2074	2015	23.89	Requirements for Internet of things devices and operation of Internet of things applications during disasters
Y.2066	2014	22.87	Common requirements of the Internet of things
Y.2068	2015	18.83	Functional framework and capabilities of the Internet of things
Y.4113	2016	17.09	Requirements of the network for the Internet of things
Y.2076	2016	16.84	Semantics based requirements and framework of the Internet of things
Y.4553	2016	15.83	Requirements of smartphone as sink node for IoT applications and services
Y.2078	2016	15.44	Application support models of the Internet of things
Y.2060	2012	11.71	Overview of the Internet of things
Y.4453	2016	11.17	Adaptive software framework for Internet of things devices
Y.2077	2016	9.54	Requirements of the plug and play capability of the Internet of things
Y.2340	2016	8.15	Next generation network evolution phase 1 - Overview
Y.4451	2016	7.21	Framework of constrained device networking in the IoT environments
Y.4702	2016	5.96	Common requirements and capabilities of device management in the Internet of things

