Information about CO2 emissions from transport services

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UNECE WP24

November 6th, 2012

Ressources, territoires, habitats et logement

Développement durable

Énergies et climat

Infrastructures, transports et mer

Prévention des risques

Présent pour l'avenir

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RÉPUBLIQUE FRANÇAISE

Ministère
de l'Écologie,
du Développement
durable,
des Transports
et du Logement

OUTLINES

- A political Vision

- How we do it : the « five stakeholders governance »

- A French regulation hand-to-hand with the upcoming European standard (pr EN 16258)

- The main features of the decree

- How to build interoperability ?

    – Experience of different aspects : Organisation, Semantic, Technical

Transport GHG Emissions in France

- Transport GHG emissions in France : 130 Mt_{eqCO2} in 2009

- 30 % of total GHG emissions in France, first economic sector in terms of GHG emissions

- A steady growth between 1990 and 2005, slightly decreasing now
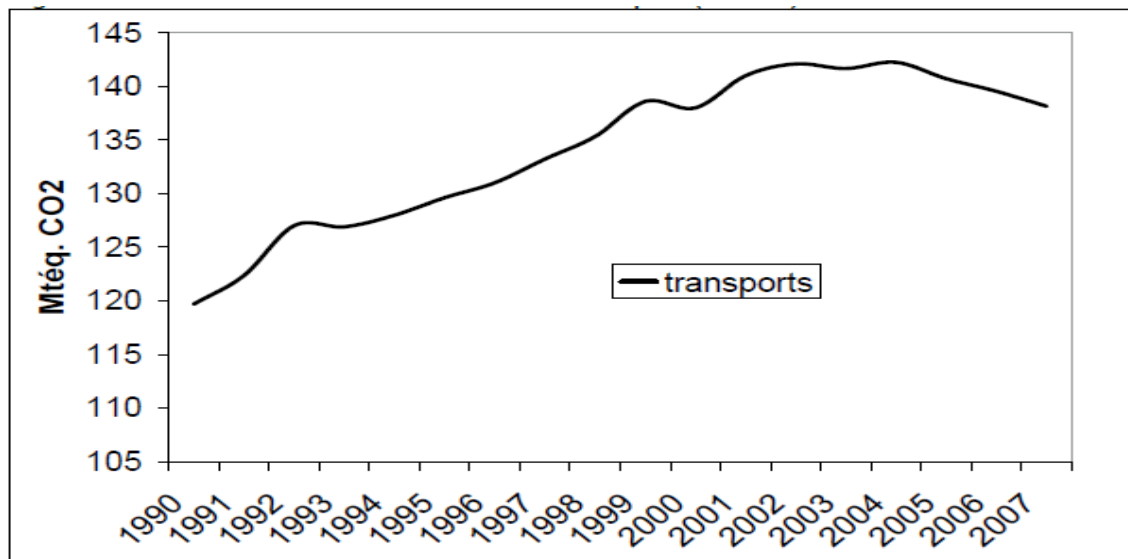
Source French Climate Action Plan, 2009

A European political vision

- **White paper « *Roadmap to a single European transport area* »** (March 2011) : achieve a 60% GHG emission reduction target.

  - Initiative 29 – Carbon footprint calculator. « *Encourage business based GHG certification schemes and develop commun EU standards in order to estimate the carbon footprint of each passenger and freight journey with versions adapted to different users such as companies and individuals. <u>This will allow better choices and easier marketing of cleaner transport solutions</u>*. »

Governance

2008 : creation of the **Observatory for Energy and Environment in Transport (OEET)** with all public and private stakeholders

Secretary by **ADEME (French Environment and Energy Management Agency)**

Permanent liaison with **CEN / TC 320 / WG 10 (**through **ADEME).**

2009- 2010 : The Grenelle **environmental laws**

Reduction of 20 % of GHG emissions from the transport sector by 2020

Information on the environmental impact of products (on an experimental and volontary basis)

Information on GHG emissions by public entities and private companies

Information on CO2 emissions of transport services

2012 : ADEME issued a **Carbon database (including transport),** managed by a Governance Committee including the stakeholders.

AP CC Association des Professionnels en Conseil Carbone

ADEME Agence de l'Environnement et de la Maîtrise de l'Energie

Standard and Regulation

Article L. 1431-3 of the transport code

" *Public or private persons organizing or selling a transport service for passengers, goods or moving purposes have to provide to the beneficiary of the transport service the quantity of carbon dioxide emitted by the means of transport used.* »

The decree enforcing this article was published on the 25th of October 2011

> *Methodologie*
> − *Levels of precision:*
> − Level 1, using parameters published by the ministry of transport
>   • Level 2, average value of the whole activity of the transport operator
>   • Level 3, average value based on each specific activity of the transport operator
>   • Level 4, information based on data issued by real time operating reports on the services
>   •

Order on emission factors of the sources of energy and level 1 values, published April 2011

Guide lines (october 2012) download from
http://www.developpement-durable.gouv.fr/Information-CO2-des-prestations-de.html

 Information will be mandatory from 1st October 2013

Who is subject to the obligation ?

All passengers and goods transport companies (road, rail or guided, inland navigation, air, maritime, powered two- or three-wheeled vehicles, urban transport)

Moving companies

Taxis, Chauffeur driven car hire companies

Local public authorities providing transport services

Travel agencies, freight forwarders

…organising or selling a transport service departing from or travelling to France

- No exclusion for « small » services (packages deliveries, cab...)

- With exception of services organised on behalf of the private or public person

What happens in case of sub-contracting ?

The information provided by the sub-contractor shall be included in the calculation method of the service provider **without modification**

The calculation method of the service provider can be based on an average value of his sub-contracted operations, for example

Should the sub-contractor information **not** be provided, or this information **clearly be incorrect**, the service provider shall **recreate** the information based on the **level 1 values**

When and how shall the information be communicated ?

- *Freight transport :* the information shall be provided before or after the fulfilment of the transport service (**to be agreed upon** between the transport service provider and the beneficiary)

- *Passenger transport :* the information shall be provided **before** ticket sale

The provider can use **any means** he/she considers as appropriate

In some cases a simplified means of communication will appear more suitable, eg. subway ticket without a clear determination of origin or destination...

The **only** mandatory information is the **Well-to-Wheel** quantity of CO_2 (corresponding to both the operating and upstream phases)

An Order defines the reference values

Illustration : Default values for road transport

| Description (depending on the nature of vehicle and the type of transport provided) (1) indicating the source (s) of energies used (s)	Number of units carried in the transport means (2)	Consumption rate of the energy source of transport means (in unit of measurement of the amount of energy source per kilometer) (3)
Light-duty vehicle - 3.5 tonnes GVW (permitted gross vehicle weight) Express Diesel fuel	0.46 tonnes	0.160 litre / km
Straight truck - 19 tonnes GVW Express Diesel fuel	2.50 tonnes	0.270 litre / km
Articulated vehicle combination - 40 tonnes GCW (gross combination weight) Shipping service Diesel fuel	6.00 tonnes	0.342 litre / km
Articulated vehicle combination - 40 tonnes GCW General cargo / Long-distance Diesel fuel	12.50 tonnes	0.342 litre / km
Straight truck - 45 cubic meters Removal Diesel fuel	15.80 cubic meters	0.270 litre / km

An Order defines the reference values

Illustration : Emission factors (in kg CO2 by unit of energy source)

Nature of the energy source	Detailed type of energy source	Unit of measurement of the amount of energy source	Emission factor		
			Upstream phase	Operating phase	Total
Electricity	Consumed in metropolitan France (excluding Corsica)	Kilowatt-hour	0.053	0	0.053
Aviation fuel	Kérosen (Jet A1 or Jet A)	Litre	0.48	2.52	3.00
Motor gasoline	Petrol at the pump (SP 95 – SP 98)	Litre	0.47	2.24	2.71
Diesel	Diesel fuel at the pump	Litre	0.58	2.49	3.07

Calculation (example 1/2)

1. The legs of the journey & the number of units

5t / 12,5t   5t / 12 800t   5t / 12,5t

Leg 1	Leg 2	Leg 3
200 km	1 000 km	500 km
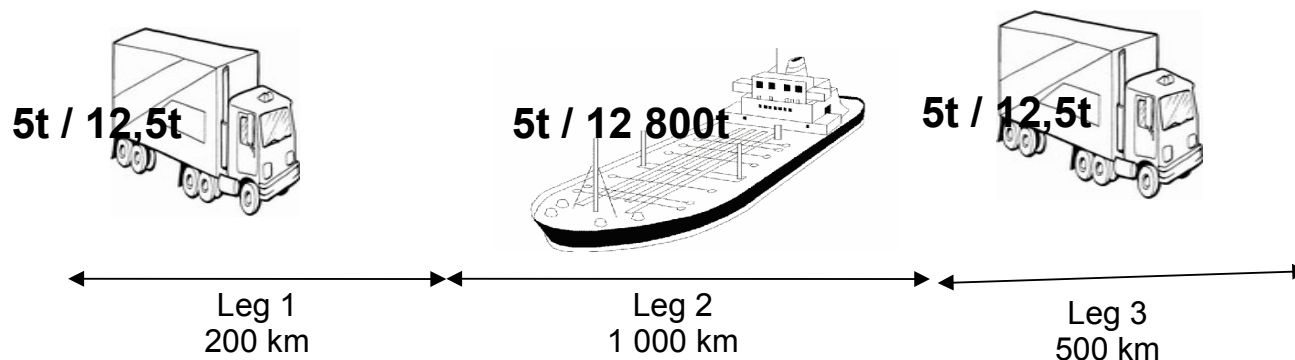
2. The mileage rates of consumption

0,342 l / km   39,20 kg / km   0,342 l / km

3. The emission factors

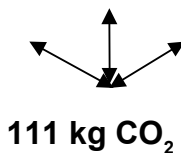$3,11$ kg CO_2 / l $3,61$ kg CO_2 / kg $3,11$ kg CO_2 / l

4. The quantity of CO_2 emitted at each segment

$27,3$ kg CO_2 $15,3$ kg CO_2 $68 ,4$ kg CO_2

5. The total quantity of CO_2

111 kg CO_2

Emissions of a Leg : Calculation ex. 2/2
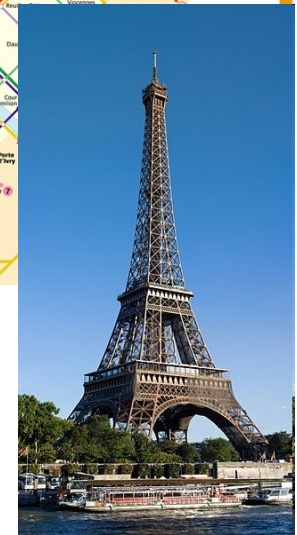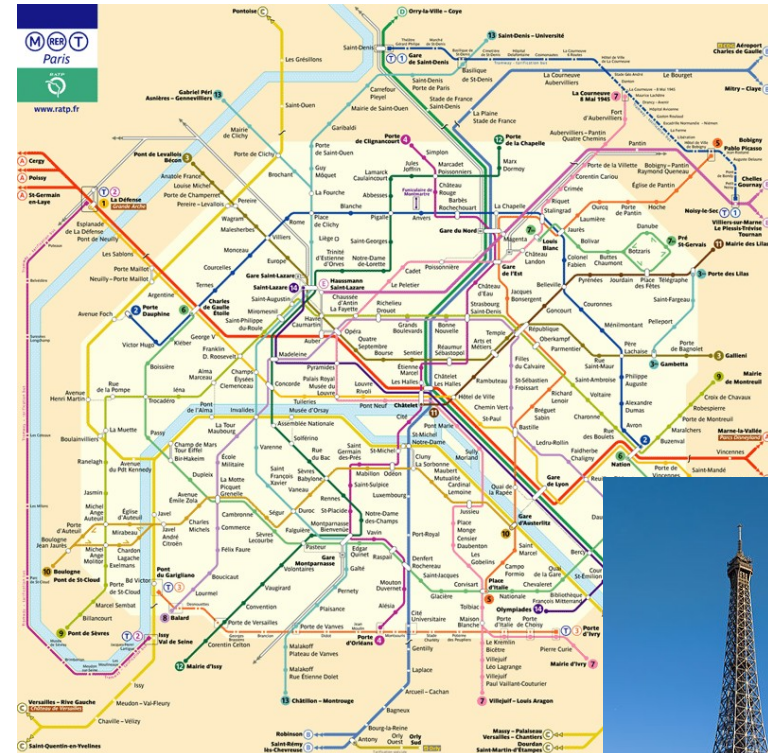
- urban transport

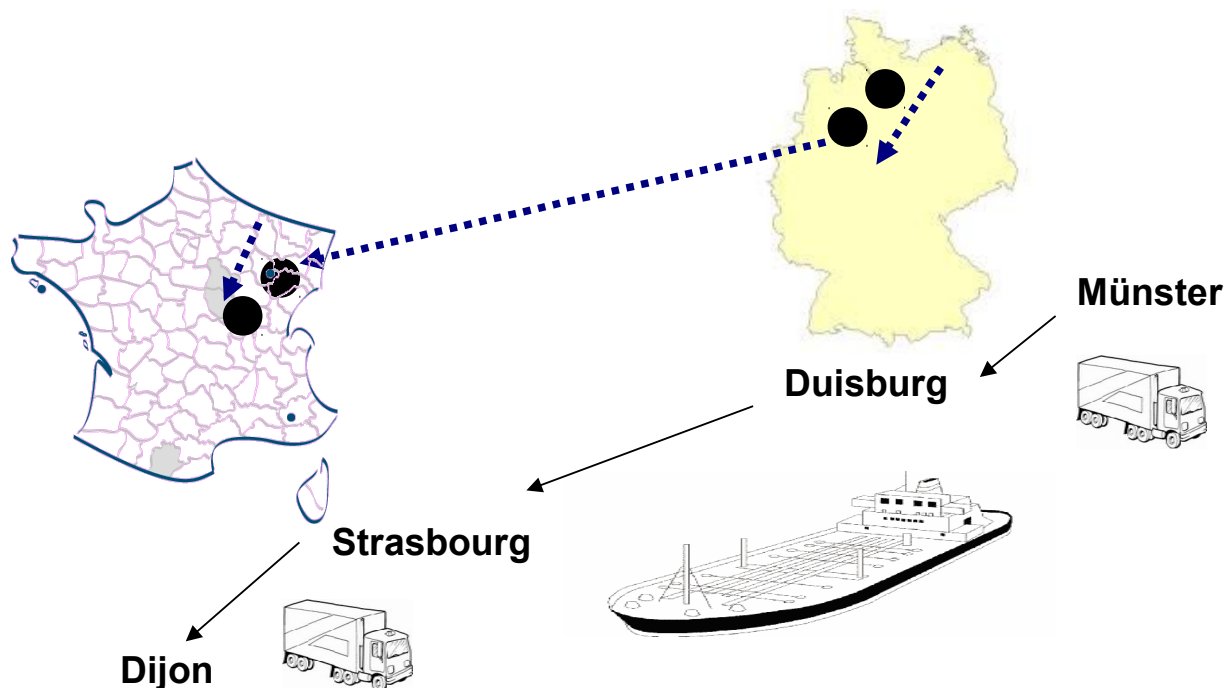Calculation done for :

- a period of one year

- a subway network

Chosen unit : passenger.km
12,2 G passenger.km (12 200 000 000
pax.km) 600 M x kWh (600 000 000 kWh)

Rate of electricty consumption :
0,049 kWh per passenger.km

Emission factor : 0,053 Kg/Kwh
Emission 2,6 g of CO_2 per passenger.km

What about international trips ?

Münster

Duisburg

Strasbourg

Dijon

The quantity of CO_2 includes the inland navigation and the road haulage. The international part of the journey is taken into account.

The **aviation sector** was ahead of other modes of transport since the signature of a specific **Convention on January 28th, 2008**. Among other obligations, this convention created a specific information site on CO_2 emissions, based on the collection of data for all inbound and outbound flights in France. The site is already in existence, ahead of the official timeframe.

Experiences of interoperability

European ITS projects and actions:

- ERTMS
- Digital tachograph
- Toll collection
- ID ABC and interoperability solutions for European public administrations (ISA, decision 922/2009/EC of 16 September 2009)
- Interoperable Fare Management
- ...

Different aspects of interoperability (1)

Based on these various experiences, it is necessary to consider:

1. Organisational interoperability

- Business goals
- Modelling processes and bringing about collaboration of entities who wish to exchange information and have different internal structures and processes
- Address the requirements of the community of the users by making services available, easily identifiable, accessible and user-oriented
- Organize going in and out of the circle of partners
- Identify possible misuse of the system and take preventive measures and mitigation of consequences of eventual dysfunctions

Different aspects of interoperability (2)

2. Semantic interoperability

- Ensuring that the precise meaning of exchanged information is understood by any other application in the system, even it was not initially developed for the purposes of the interoperable organisations
- Allowing the combination of information received from external partners with other information resources and process it in a meaningful manner.
- Allowing multilingual application
- Manage the necessary evolutions of the conceptual data model and provide the successive versions of the reference documents according to the needs of the developers and the users
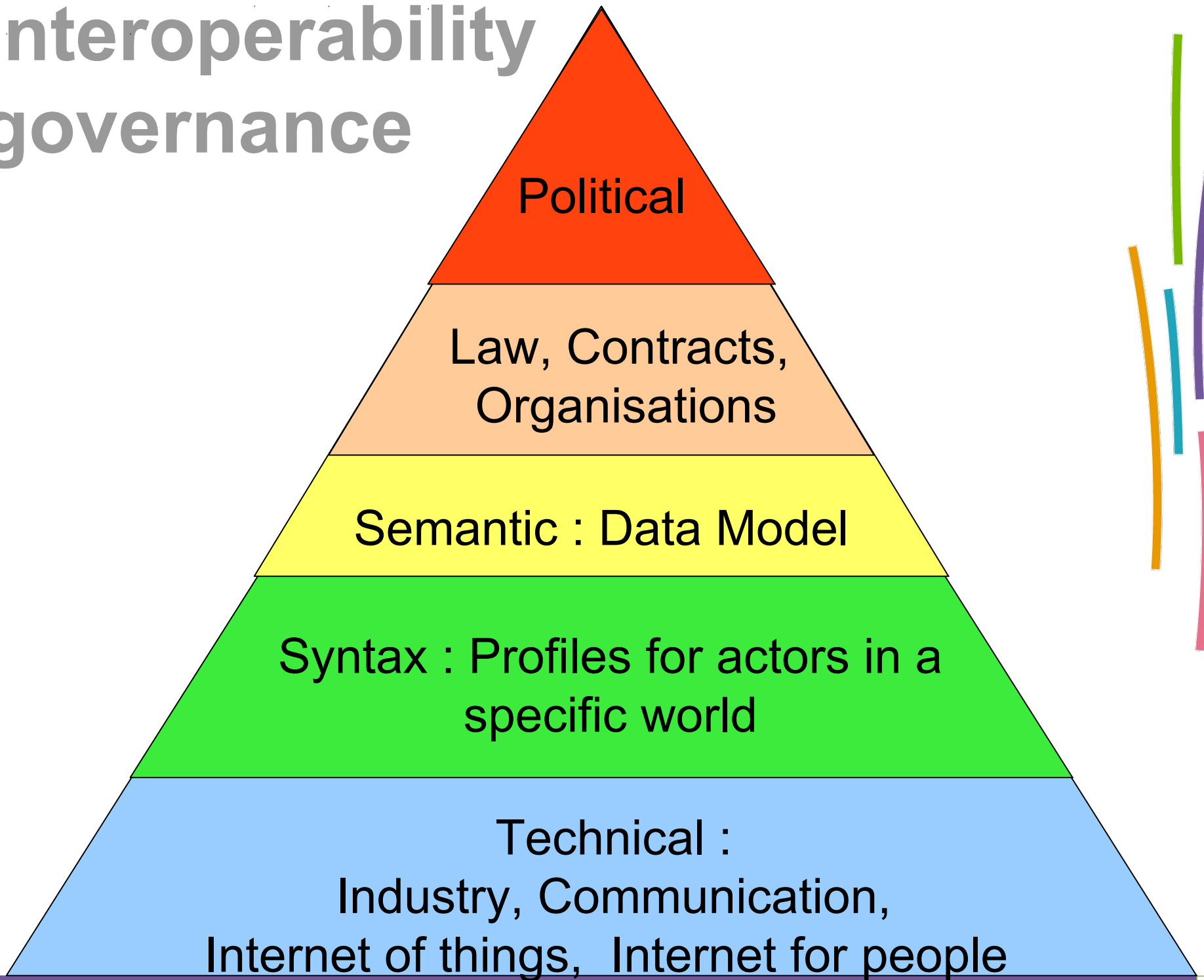
Different aspects of interoperability (3)

3. Technical interoperability

- Linking computers, mobile devices, "intelligent things" together to create systems and services with a level of quality appropriate to the context of usage
- Interconnection service, open interfaces
- Data integration and middleware
- Protection of data (both personal and commercial)
- Data presentation and exchange
- Accessibility and security
- Safety of use of applications (alone and in combination with others, eg; distraction of vehicle drivers...)

Interoperability governance

Political

Law, Contracts, Organisations

Semantic : Data Model

Syntax : Profiles for actors in a specific world

Technical :
Industry, Communication,
Internet of things, Internet for people

ITS Ministerial Roundtable

- **19th ITS World Congress 2012 in Vienna**

    - Ministerial round table invited by :

        - Doris Bures, Austrian Federal Minister for Transport, Innovation and Technology,

        - and Siim Kallas, European Commissionner for Transport

    - Composed of Transport Ministers from:

        - EU Member States

        - OECD member countries and BRICS members as well as further ITS relevant countries

    - and international organizations

        - ITF International Transport Forum

        - IRU International Road Transport Union

        - **UN/ECE - United Nations Economic Commission**

        - UITP - International Association of Public Transport

        - IBEC - International Benefits, Evaluation and Costs Working Group

        - PIARC - Association mondiale de la Route

        - IRF - International Road Federation

Joint statement-1

- Mobility has become a high priority in today's society and is central to our individual well-being and to our common economic development.

- At the same time, the ever increasing demand for mobility has created or amplified the major transport issues: accidents and casualties, traffic congestion, emissions including greenhouse gases, and energy consumption and dependency

- ITS have to be seen as an effective instrument for policy makers to achieve transport policy objectives with respect to safety, efficiency and environmental sustainability and in order to save public funds.

- As the ITS application needs may differ from region to region, the biggest potentials and benefits can only be realised if the foundations of ITS solutions are put in place in an interoperable and harmonised, seamless and user-friendly way, and ideally on a global scale.

Joint statement -2

The Ministers declared their support

- for an increased political commitment to integrating appropriate ITS technologies and services into national transport policies, and
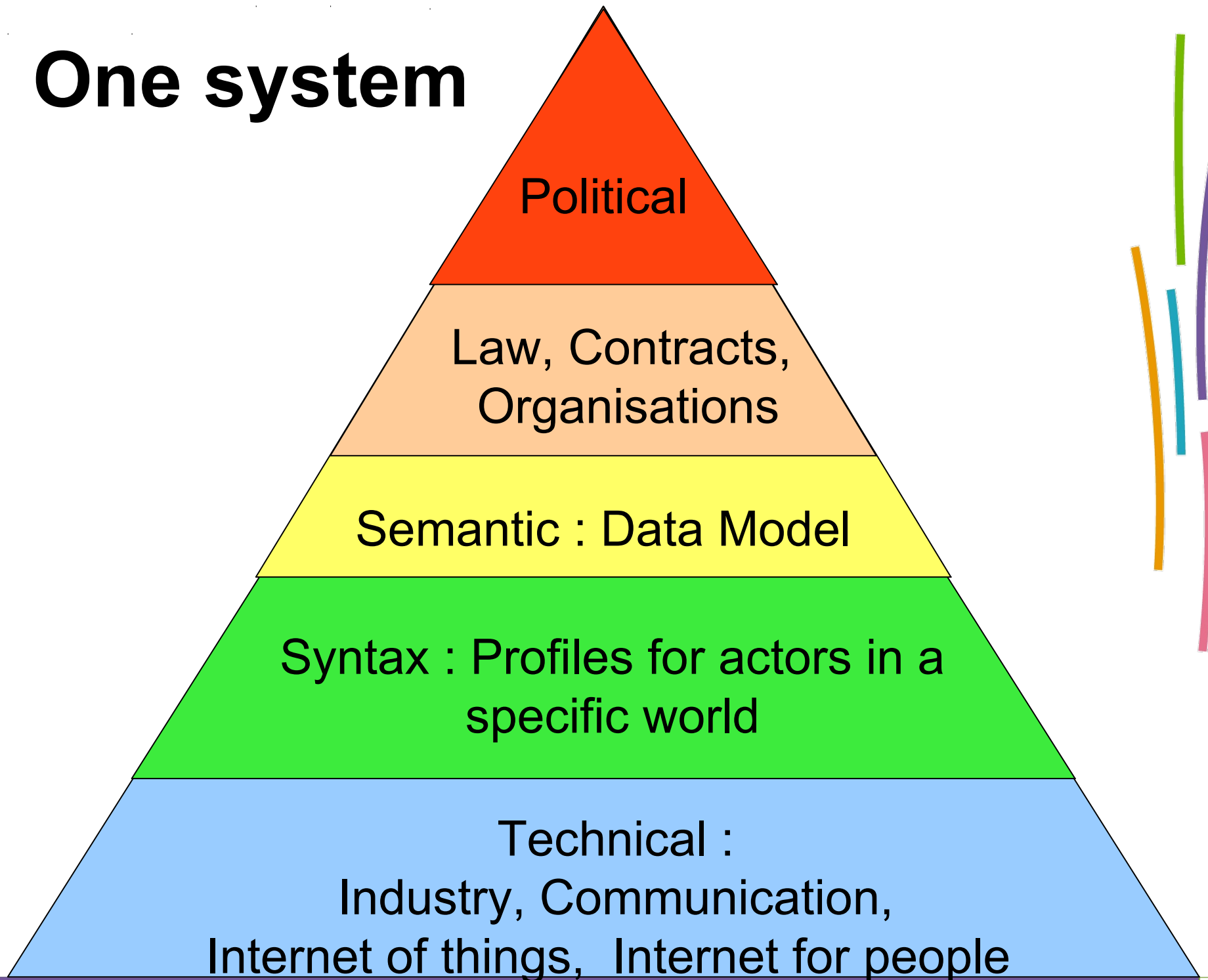
Request

- the global ITS community to identify upcoming challenges, opportunities and success stories supporting a more accelerated deployment of ITS solutions on a global scale, and
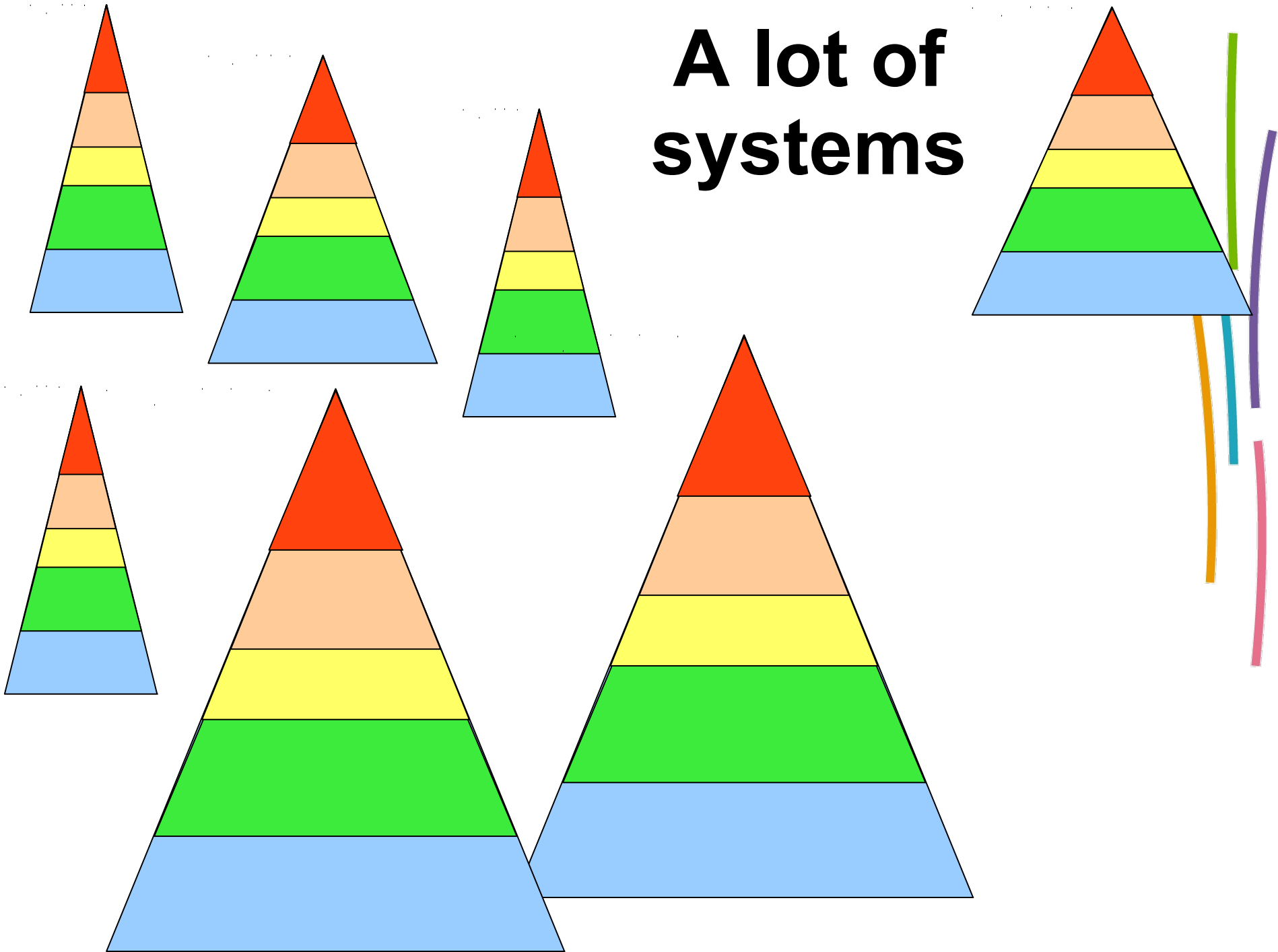
invite

- the Ministerial Round Tables of future ITS World Congresses to discuss progress made so far and to identify priority issues for international agenda setting, inviting relevant international organisations and legal bodies to act.
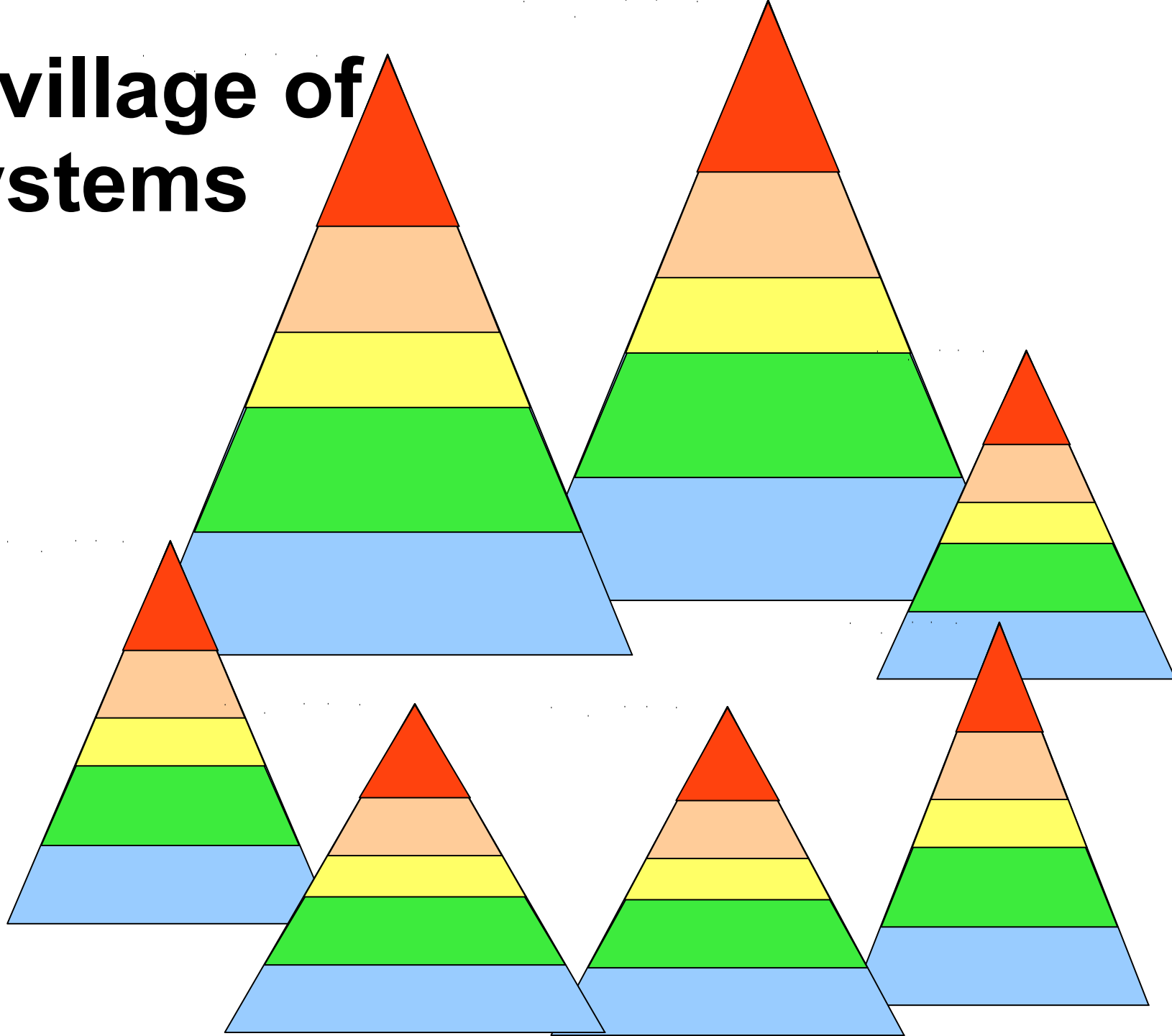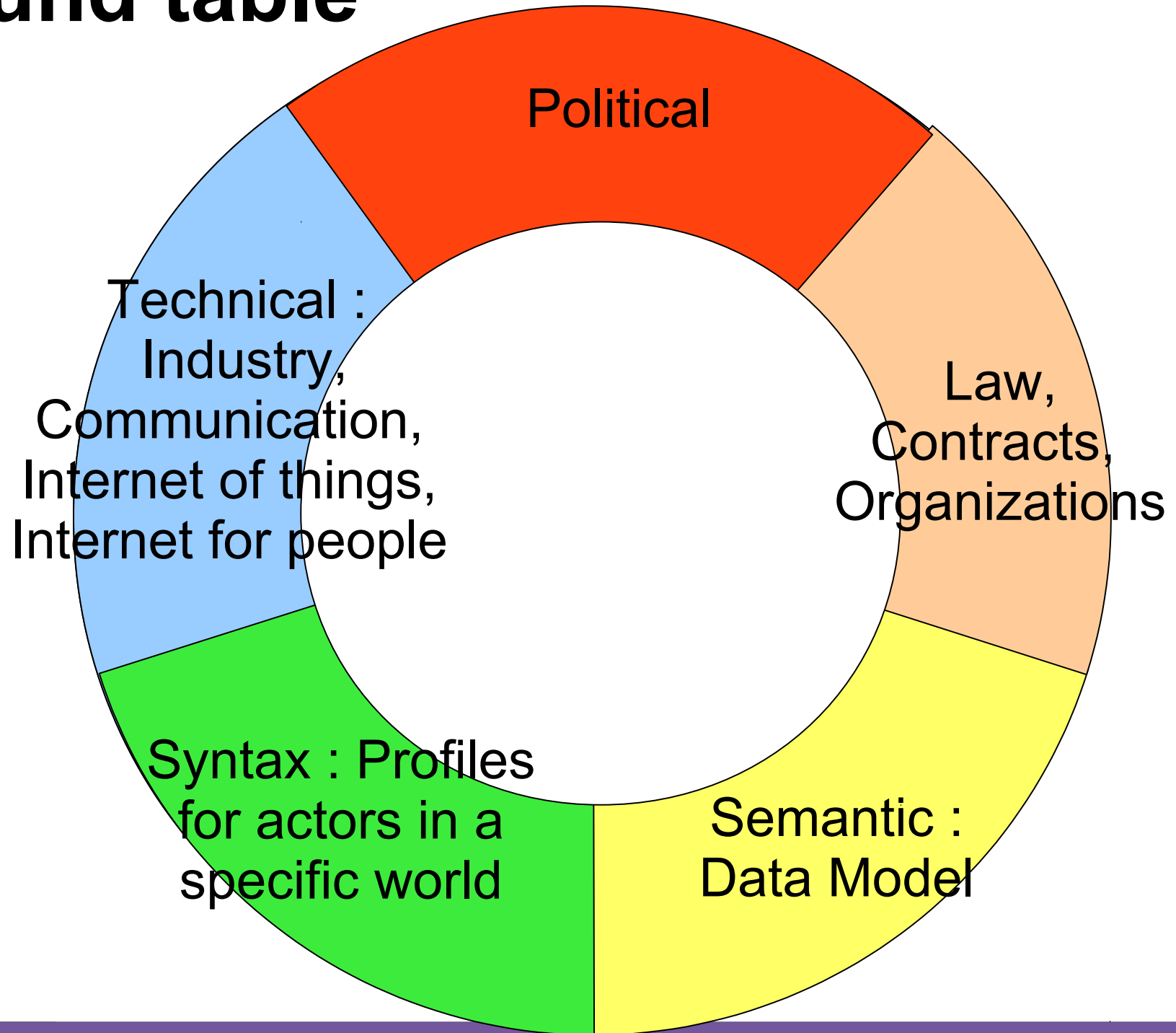
One system

Political

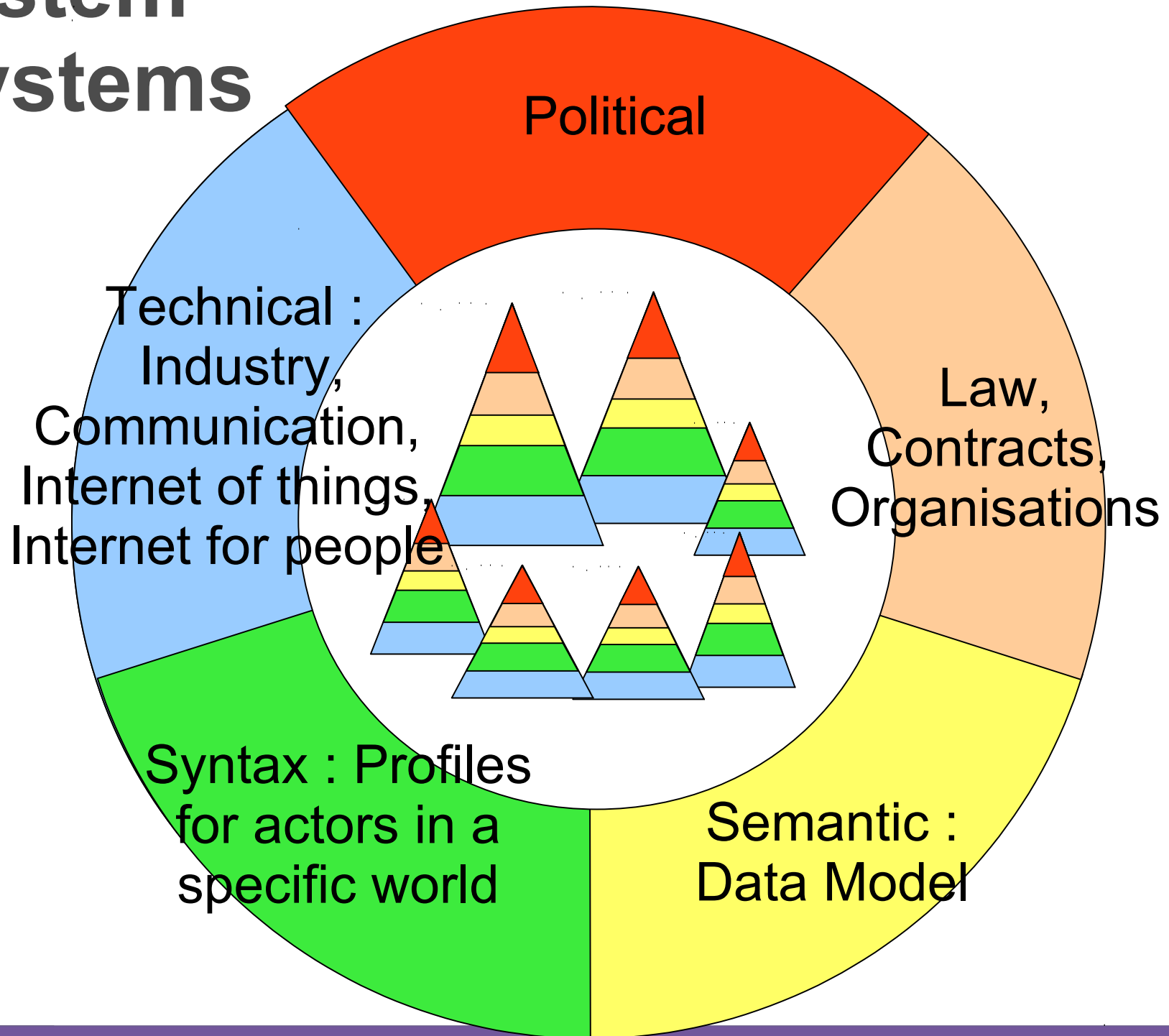Law, Contracts, Organisations

Semantic : Data Model

Syntax : Profiles for actors in a specific world

Technical :
Industry, Communication,
Internet of things, Internet for people

A lot of systems

A village of systems

A round table

A system of systems

Political

Technical : Industry, Communication, Internet of things, Internet for people

Law, Contracts, Organisations

Syntax : Profiles for actors in a specific world

Semantic : Data Model

Thank you

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