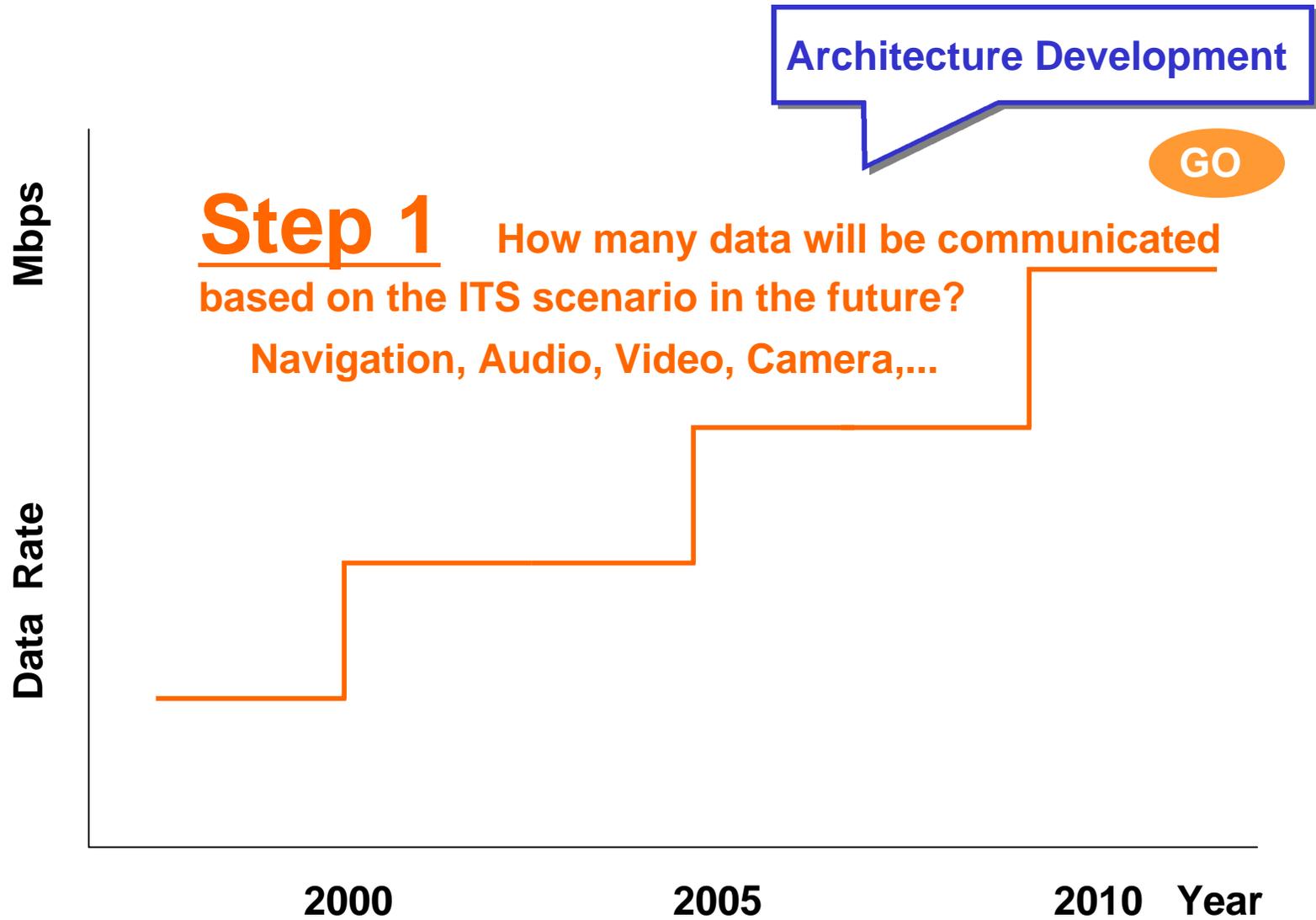


Investigation of Physical Layer

Steps for the Investigation of Physical Layer for IDB-M

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NEXT

Architecture Development

Who does? **GO**

1 Objectives



* Reduction in Procurement cost with regard to ITS

2 Feature of the Development

* Collaboration of application engineers and system engineers

3 Procedure of the Development



4 Contents of ITS Scenario

* Technical epochs expected in the near future

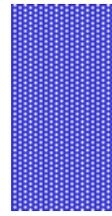
* Scenario description for 19 ITS User Services



Support for complying with advanced communication society

--- Multimedia information and exchange among group vehicles

Trend description of ITS and business environment chart



Step 1 How many data will be communicated based on the ITS scenario in the future?

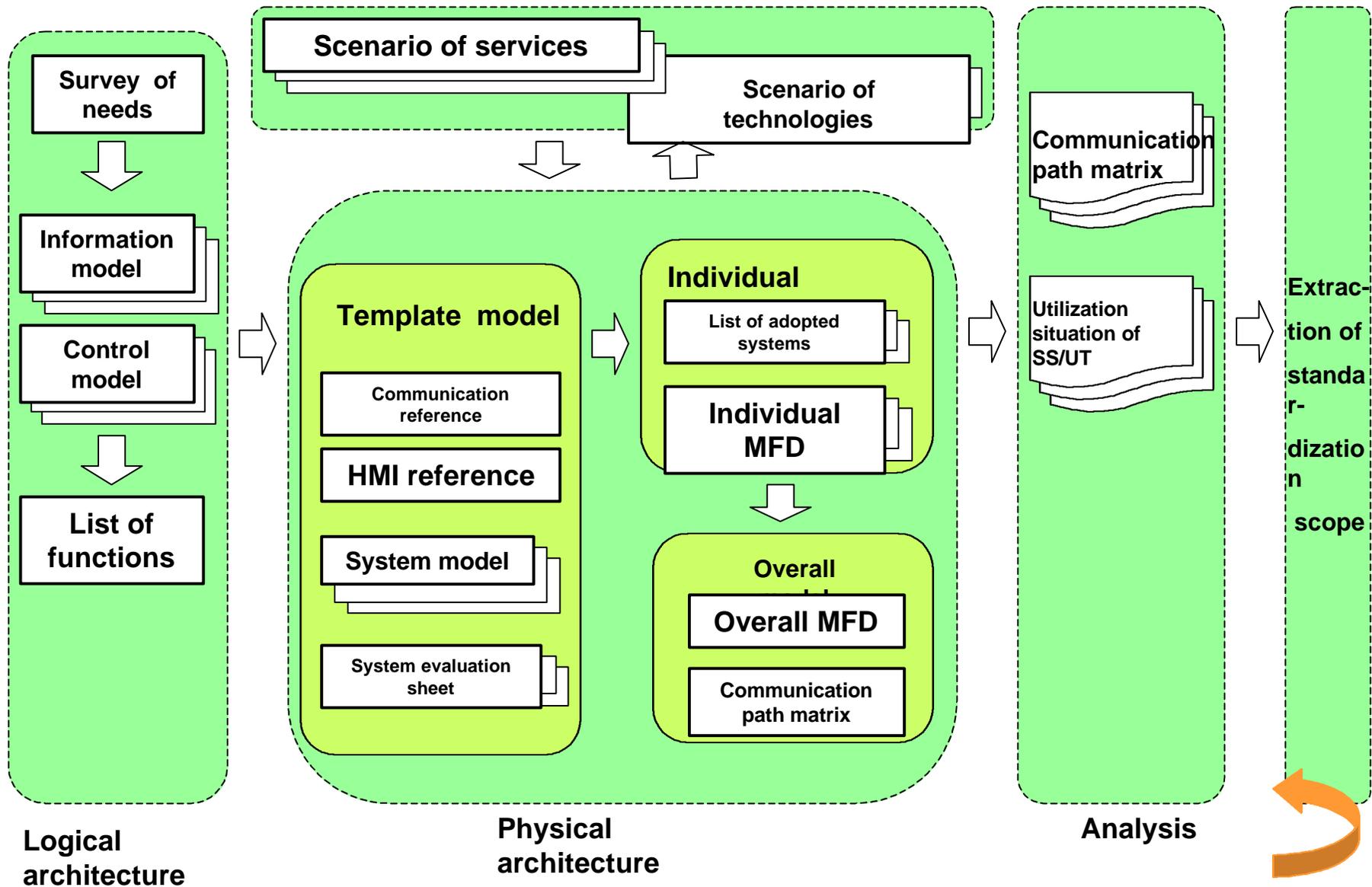


Objectives

1. **Efficient construction of comprehensive system**
2. **Reduction in procurement cost with regard to ITS**
3. **Promotion of domestic and international standardization**
4. **Presentation of ITS demand specification regarding onboard systematic side**
5. **Education (object-oriented)**



Procedures of the development



ITS service	ITS user service	Sub-service
1. Navigation/dynamic route guidance	[1]	Vehicle location information
	[2]	Route guidance
	[3]	Support for economic running
2. Road traffic information	[4]	Road traffic situation information
	[5]	Traffic restriction information
	[6]	Traffic sign information
3. Service Information	[7]	Service information
	[8]	Support for service reservation
4. Automatic toll collection	[9]	Automatic road toll collection
	[10]	Automatic facility and service fee collection
5. Support of visual capability	[11]	Visual support information
	[12]	Dead angel information
6. Driving environment information and warning	[13]	Driving environment information
	[14]	Surrounding obstacle information
	[15]	Traffic condition information
	[16]	Traffic offence information
7. In-vehicle monitoring and warning	[17]	Vehicle monitoring and warning
	[18]	Driver vigilance and monitoring
	[19]	Emergency medical center report
8. Driving control	[20]	Support for parking lot entrance and exit
	[21]	Tailgating
	[22]	Lane-keeping driving
9. Automatic driving	[23]	Merging with exclusive lane
	[24]	Automatic running on the exclusive lane
	[25]	Vehicles moving in formation
10. Advanced traffic flow control	[26]	Travel time control
	[27]	Centrally decided route guidance
11. Road maintenance vehicle control	[28]	Road maintenance vehicle operation control
12. Specialty vehicle operation control	[29]	Specialty vehicle operation control
13. Support for multi-modal application	[30]	Support for multi-modal application planning
	[31]	Dynamic guidance of multi-modal application
14. Support for public transport operation and operation control	[32]	Support for bus operation control
	[33]	Support for taxi operation control
	[34]	Support for public vehicle priority driving
	[35]	Automatic collection of public transport fare
15. Support of commercial vehicle operation	[36]	Support for vehicle operation control
	[37]	Support for dynamic vehicle allocation and freight delivery
	[38]	Support for freight control
16. Hazard prevention for pedestrians	[39]	Hazard prevention for pedestrians
17. Automatic emergency report	[40]	Support for emergency report
	[41]	Stolen vehicle investigation
18. Support for emergency vehicle rescue operation	[42]	Support for emergency vehicle priority
	[43]	Support for emergency vehicle operation
19. Support for complying with advanced communication society	[44]	Multimedia information
	[45]	Support for information exchange among group vehicles



Who does?

JSK/JAMA

Association of Electronic Technology
for Automobile Traffic and Driving
Japan Automobile Manufacturers Association

On going Activities

1 R&D Activities

- * Economic effects of ITS
- * energy-saving due to ITS

2 Information Research Activities

- * Its industry trends

- * ITS technologies exchange between Japan and other Asian countries

3 Standards Development Activities

- * Its standardization to support ISO/TC204 activities

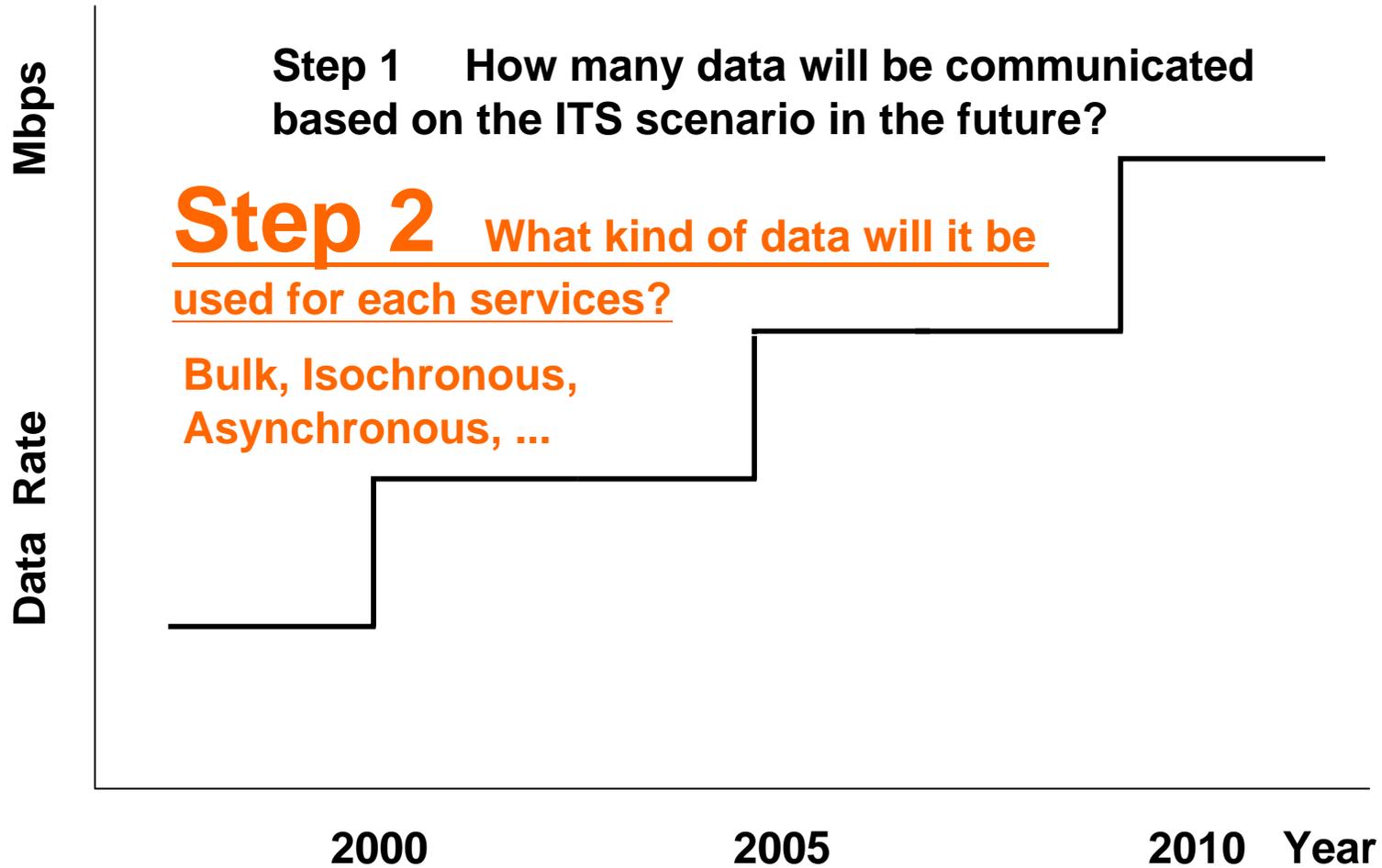
- * Development of system architecture for ITS on-board systems

4 International activities

- * Promoting international exchange

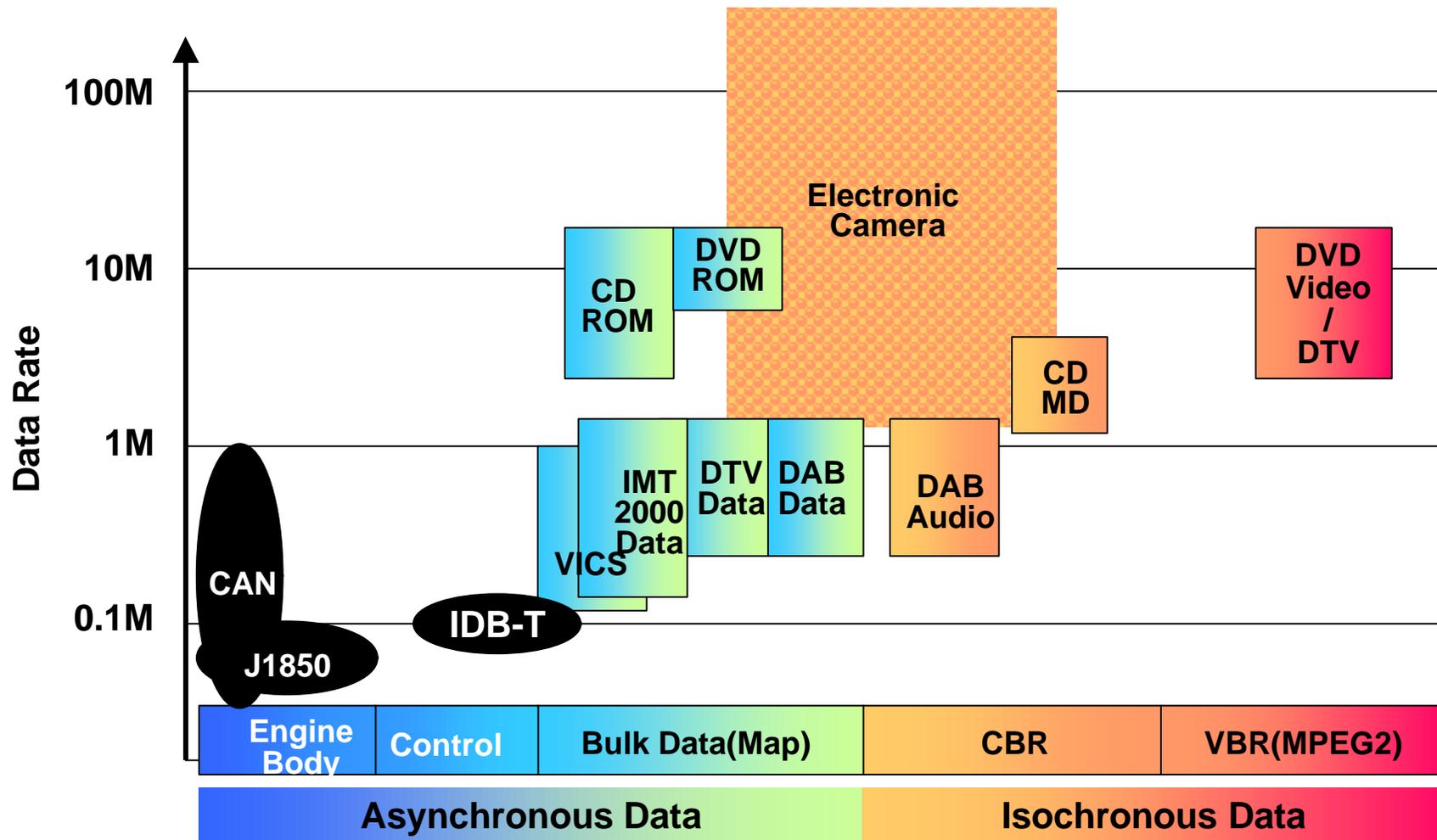
5 Public Relations Activities





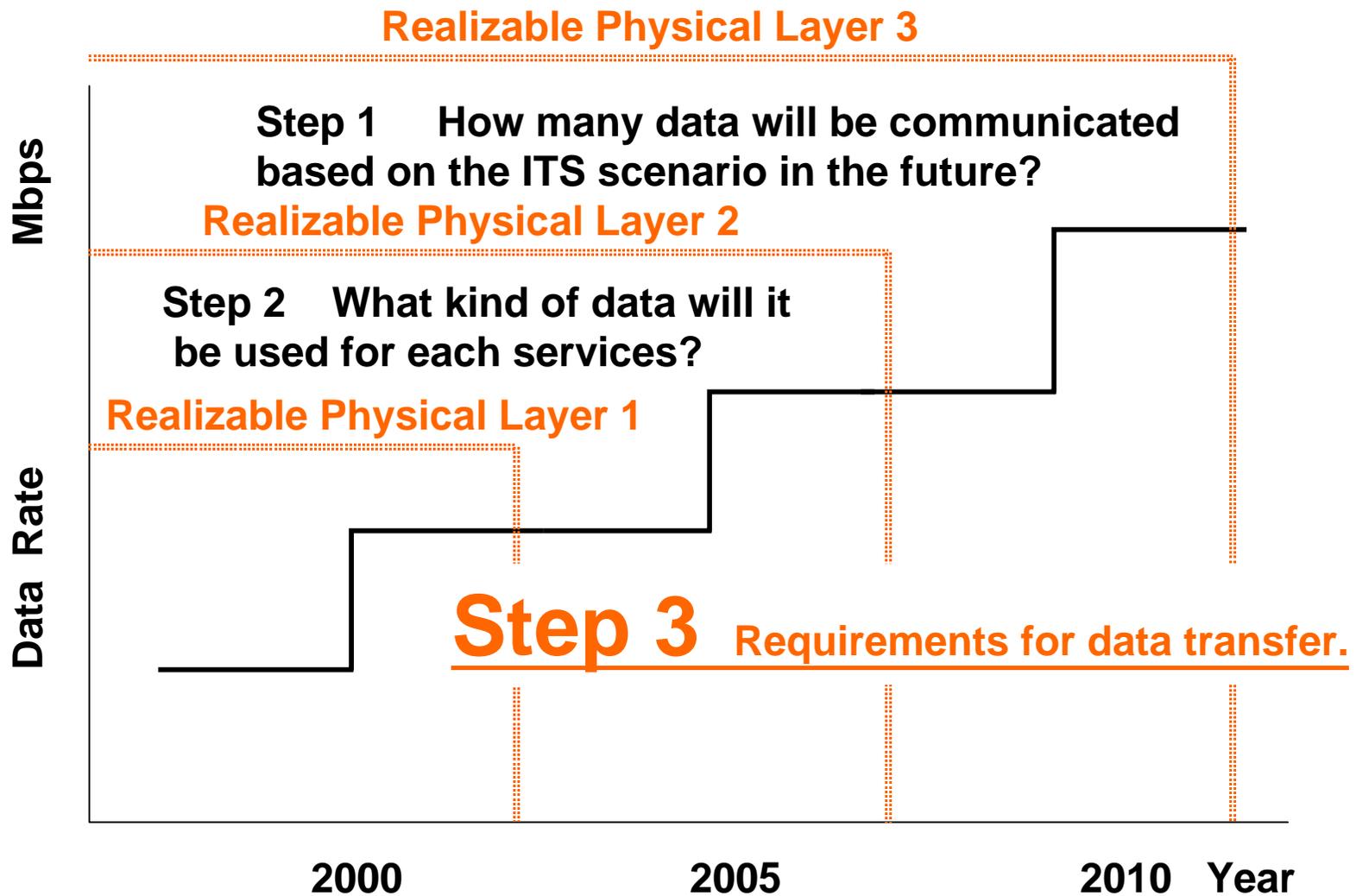
NEXT

Step 2 What kind of data will it be used for each services?

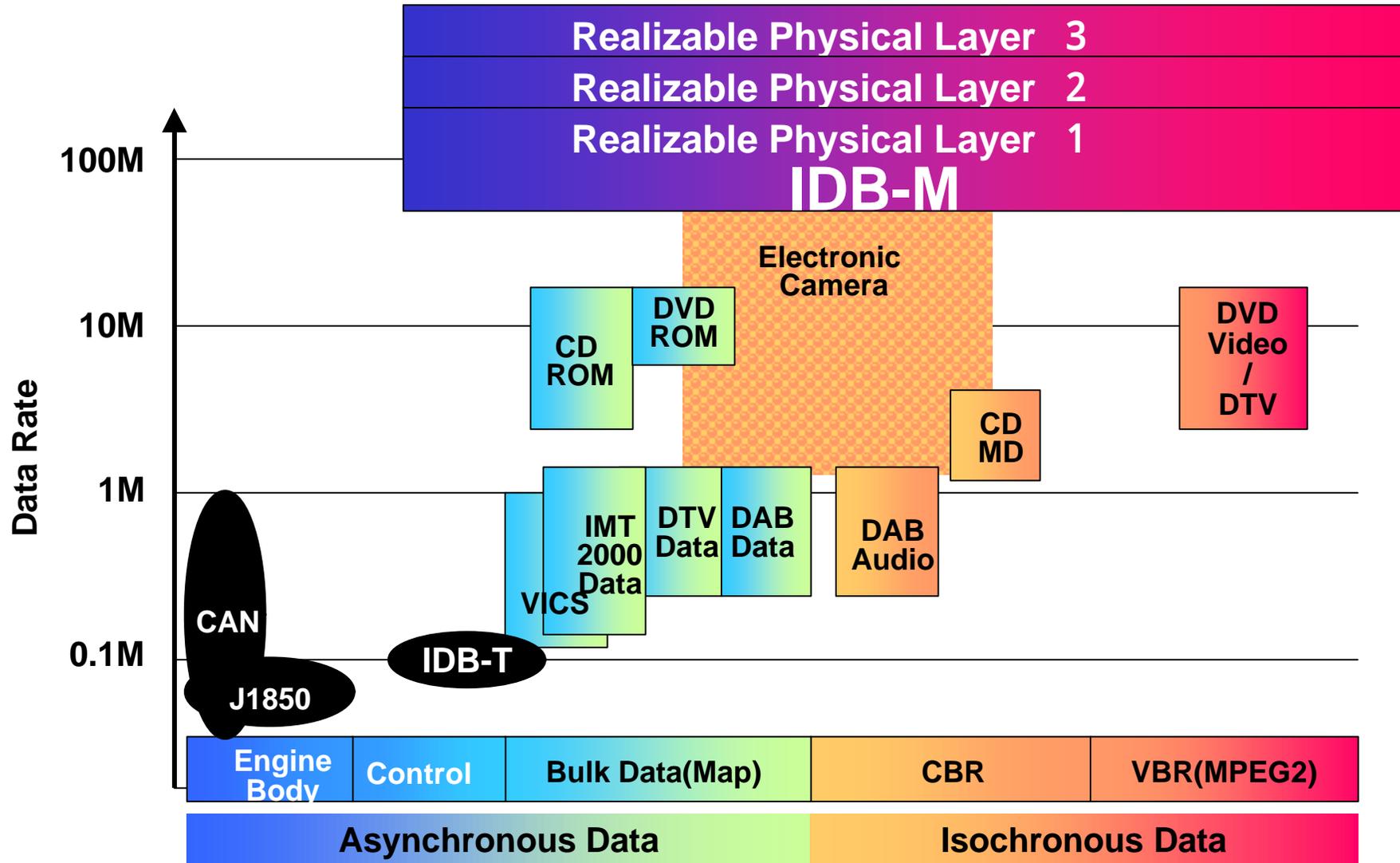


What kind of Data?





Step 3 Requirements for data transfer.



What kind of Data?



**Thank you very much
for your attentions**

**Investigation
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