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INTERNET OF THINGS TECHNOLOGY - A POWERFUL CATALYST FUNCTIONING SINGLE DIGITAL SPACE

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ФЕДЕРАЛЬНОЕ ГОСУДАРСТВЕНОЕ УНИТАРНОЕ ПРЕДПРИЯТИЕ

НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ ИНСТИТУТ РАДИО

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1. Introduction

- The digital economy has become an official development program of many countries.
- V. Putin: "… we will not be able to move on to the next technological order without the digital economy. The Russian economy has no future without the transition to a new technological order. Therefore, this is the number one task in the sphere of the economy, which we must solve.
- The digital economy dictates the development of new directions for the development of IoT.

2. The goals and objectives of the digital economy.

1) To create a new digital economy, the foundation of which should be advanced production and a global convergent infocommunication environment that will include all information technologies used in countries, such as e-commerce, e-government, e-business, etc .;
2) To find new forms of learning for training (school and university);
3) Intensify scientific research for the production of knowledge, which is critical for all countries developing the digital economy.

Only the successful implementation of these goals and objectives will allow countries to take a worthy place in the modern global world.

3. Problems

- Decrease in production.
- The degradation of the scientific environment
- Decrease in the level of school and university education

4. The potential of IoT in the digital economy

Objects interacting in the modern global convergent infocommunication environment :

Before IoT	After IoT	Near future
- Man-machine systems (MMS) - Machine systems (MS)	- Man-machine systems (MMS) - Machine systems (MS) - IoT inert and living systems (IoTC)	- IoTC only (Since the MMS and MS are transformed into IoTC)

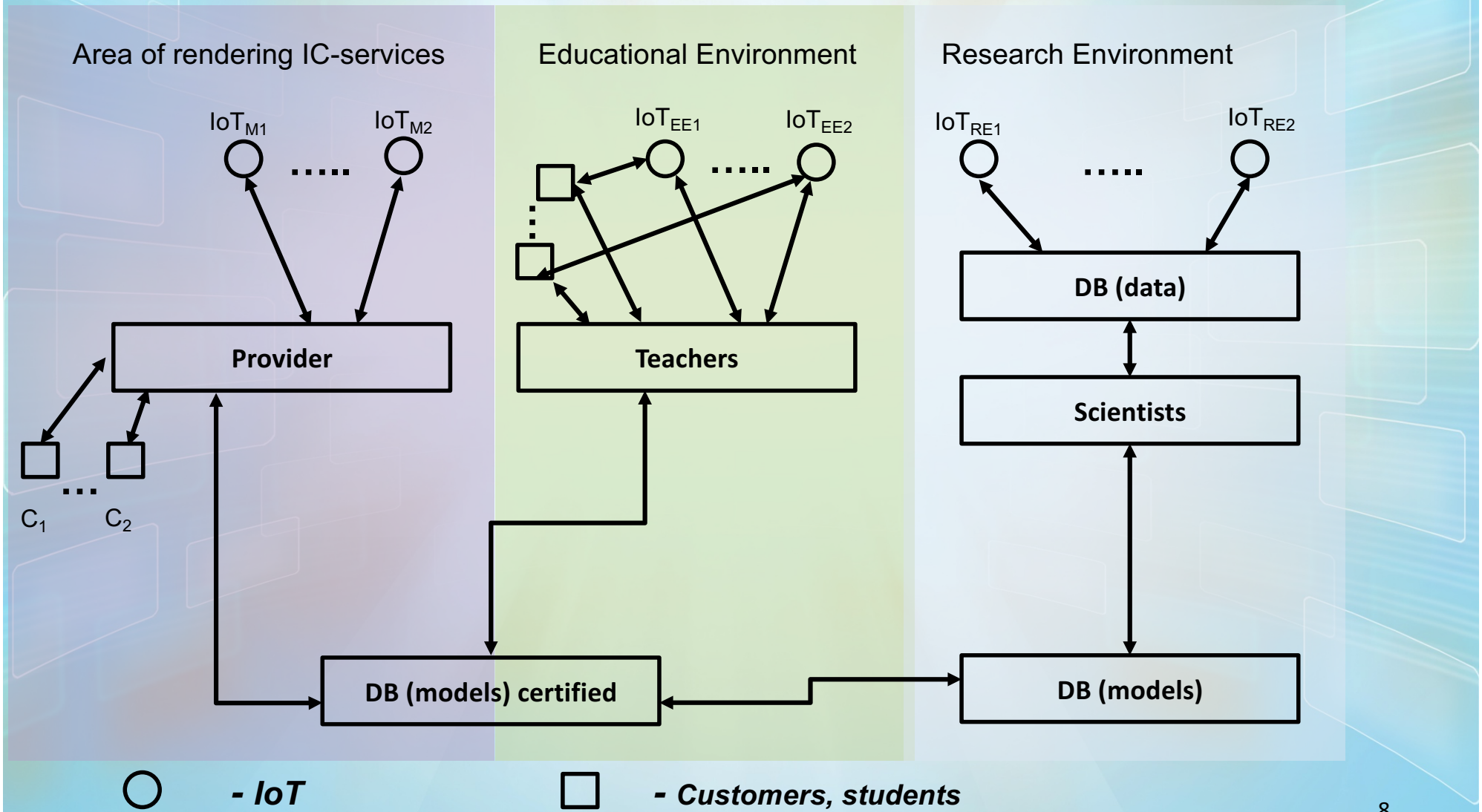
All living and inert objects in the real world "acquire" a voice and can interact with the CIE using IoT technology

4. The potential of IoT in the digital economy

It is assumed that extensive use of additional data produced by IoT allows to reduce uncertainty in decision making and to rationalize in real time not only the activity of MMS in the context of increasing anthropogenous environment, but also to reduce consumption of limited resources and improve the quality of life of a mass user by providing him personalized services.

4. The potential of IoT in the digital economy

Area of application of IoT

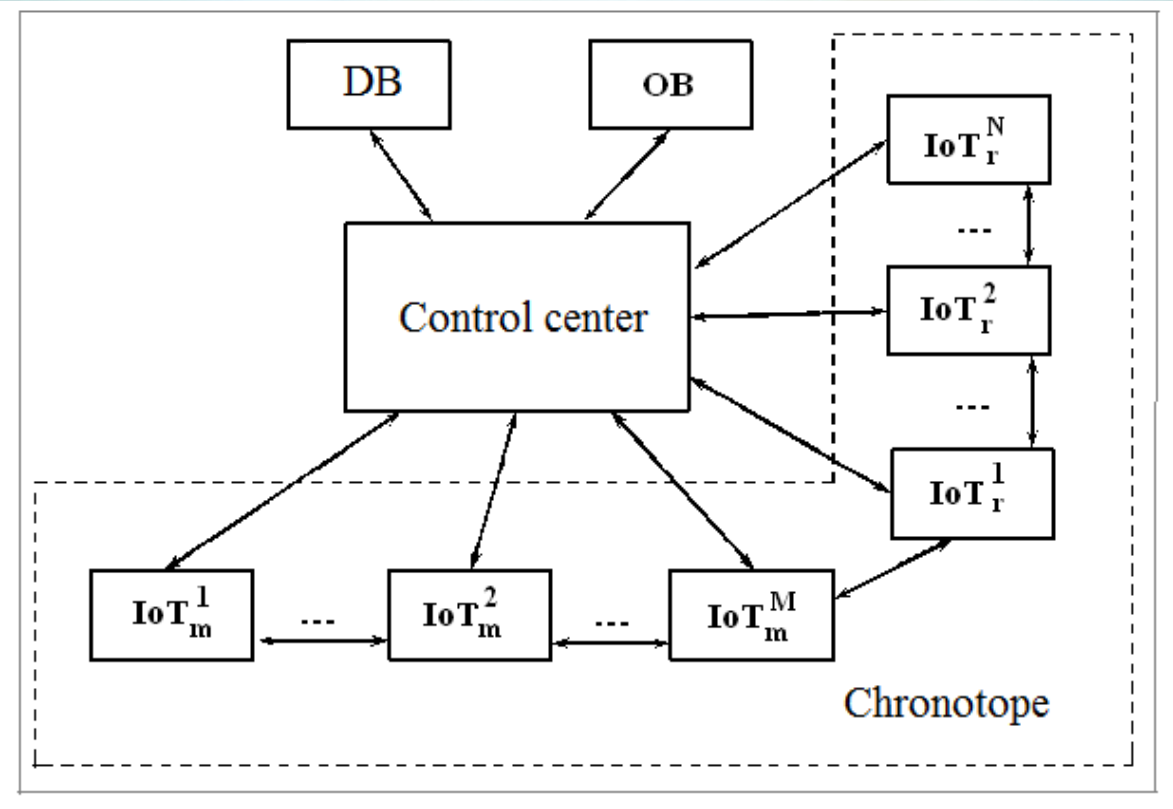


5. Solutions

Today's problems of experimental biogeochemistry, which can be solved using IoT:

- The need for continuous spatial monitoring of the state of living and inert objects of nature under external natural and anthropogenic influences,
- The study of the interaction of living organisms with the environment, the processes of self-organization and regulation of biological systems, which is the subject of ecology,
- Necessity of definition of parameters of adaptive possibilities of objects at external natural and anthropogenous influences.

5. Solutions



Flowchart of a fragment of global convergent infocommunication environment;
r – controlled devices, m - monitoring devices.

5. Solutions

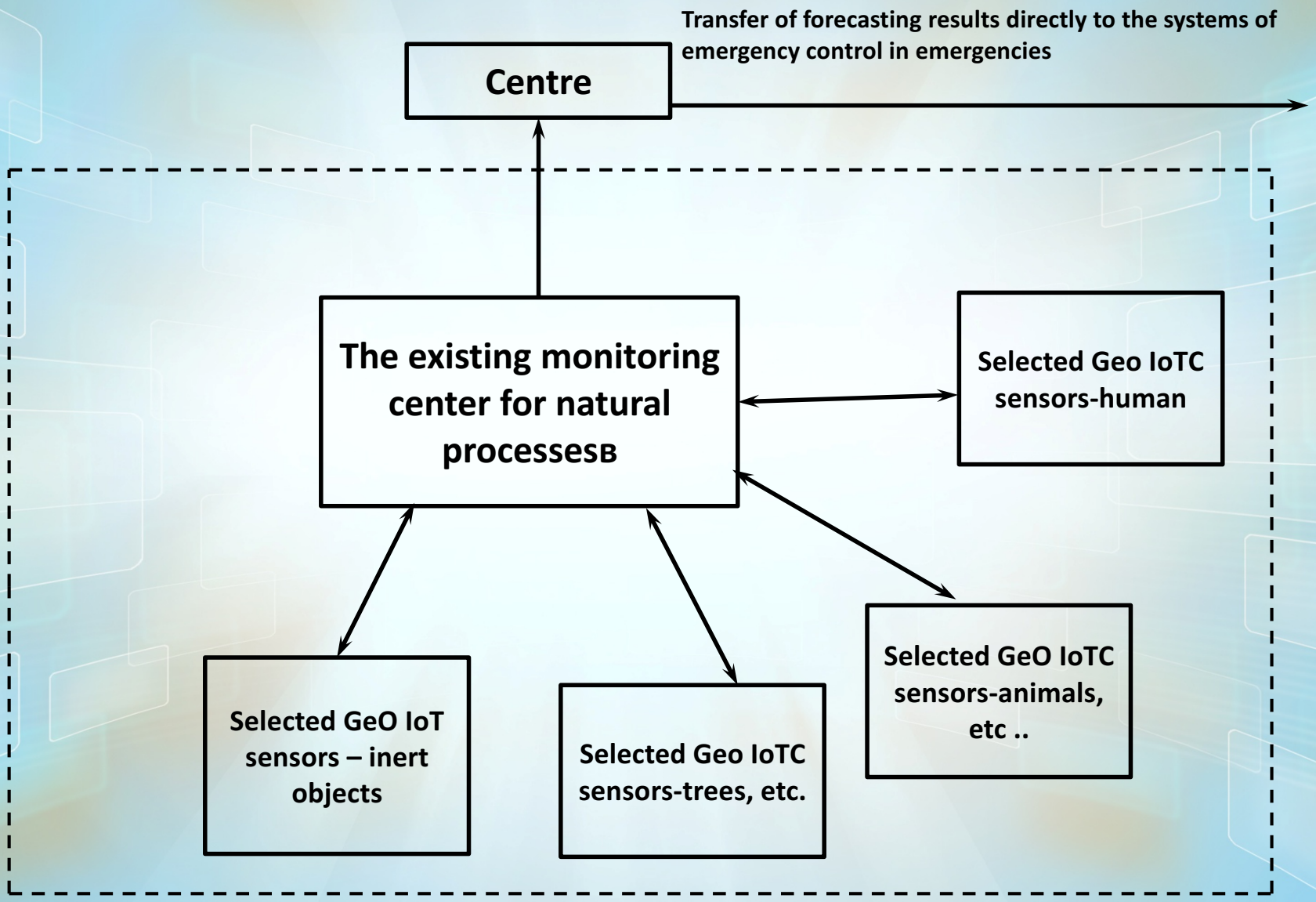
As:

Any IoTs can in principle continuously interact with any other IoTC, then researchers can monitor the dynamic processes that occur in the IoTCs under investigation. Including the reactions of IoTC parameters of the external environment and that it is especially important for us to fix the moment of the beginning of the adaptation mechanism operation and its potentialities

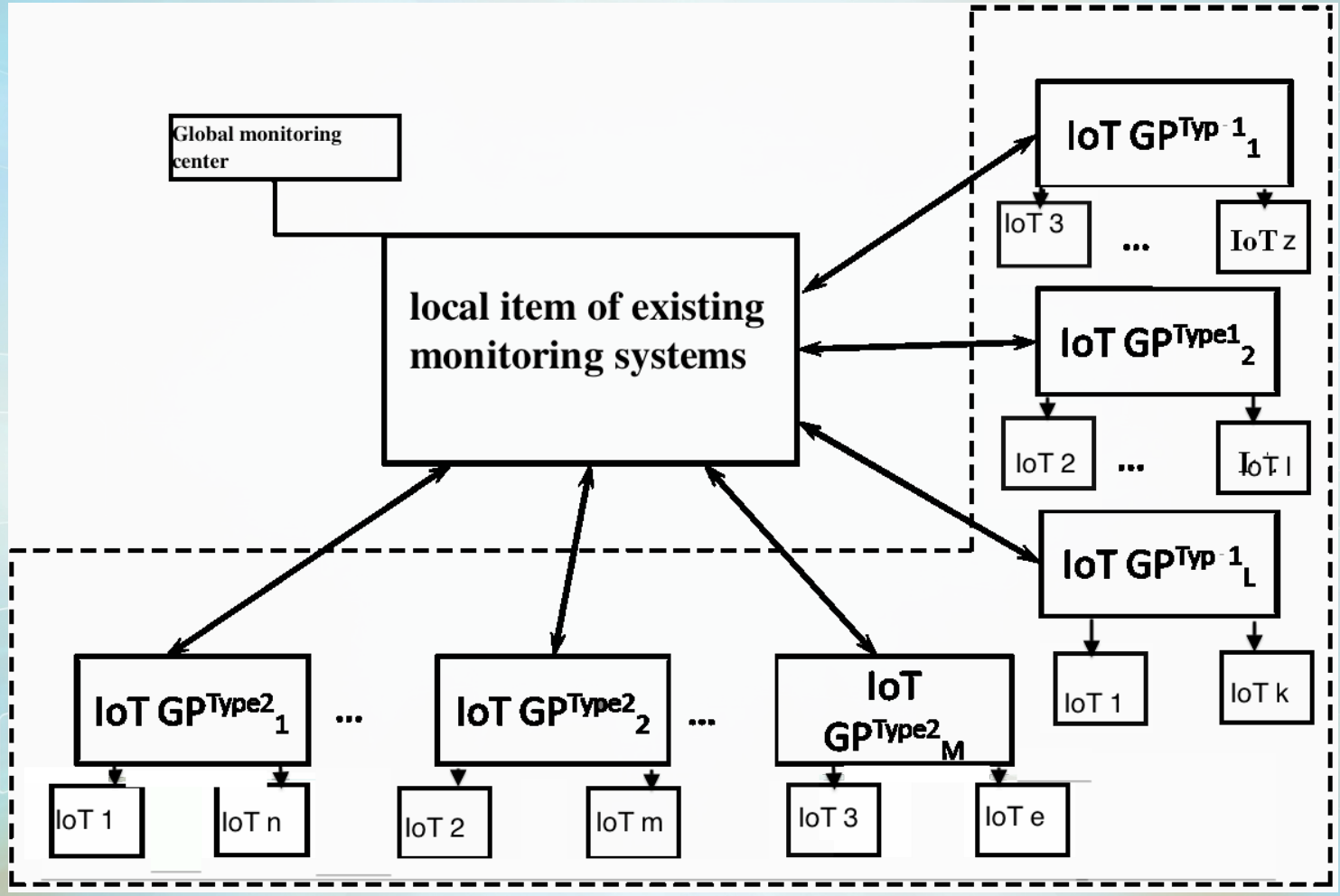
Observation is conducted on IoTs of different physical nature, then it is possible to observe the results of interaction of living organisms with the environment, the processes of self-organization and regulation of biological systems, which is the subject of ecology.

Continuous observation is introduced, then it is possible to determine the parameters of the adaptation potentials of the investigated IoTC under external natural and anthropogenic influences..

5. Solutions


Transfer of forecasting results directly to the systems of emergency control in emergencies
Centre
The existing monitoring center for natural processesв
Selected Geo IoTC sensors-human
Selected GeO IoT sensors – inert objects
Selected Geo IoTC sensors-trees, etc.
Selected GeO IoTC sensors-animals, etc ..

5. Solutions



Система мониторинга за глобальными процессами

6. Conclusions

Only expanding the scope of IoT's use of the educational and scientific environment will solve the current critical tasks of transition of the CIS countries to the digital economy.

7. Suggestions

Since the CIS countries still have significant scientific educational personnel, the creation of a powerful experimental base using IoT will allow raising the level of education and research and reaching innovative milestones that are necessary and sufficient for the creation of a digital economy.

Therefore, it is proposed to make this line of use of IoT a priority for CIS countries within the ITU.

8. Prospects

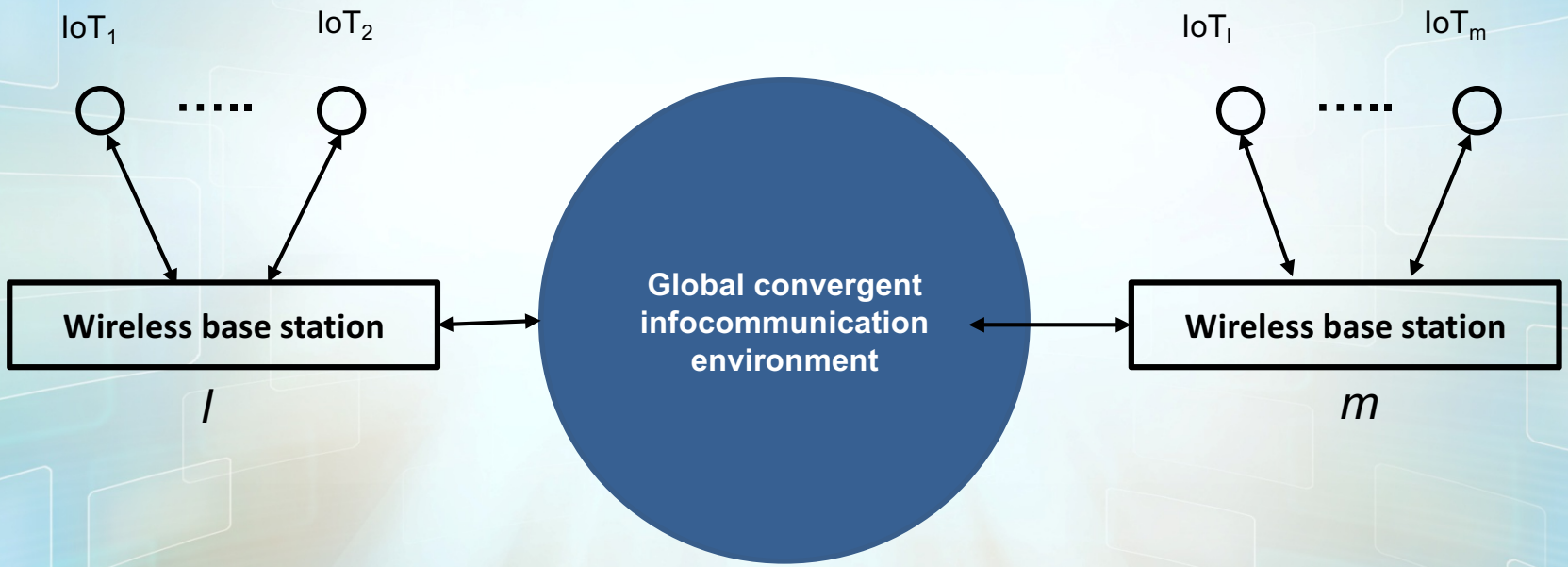
The development of digital technologies, including for the formation of a digital environment, can lead humanity to two uncontested development directions:

- **Posthuman society or**
- **Noosphere.**

When building a digital society, it is necessary not to miss this bifurcation point.

8. Prospects

The use of IoT in global Trophic chain



9. Acknowledgments

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