

# Strategy of Olympiads in informatics' development

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## Part 1. States edu-policy and edu-services to each pupil in modern world

- History of edu- informatization in Russia = history of IOI and RusOI
- History of edu- informatization in Russia = history of former State edu- standart in informatics in the world
- Stages of development IOI and RusOI are the same

## Five wales

the 22nd International Olympiad in Informatics

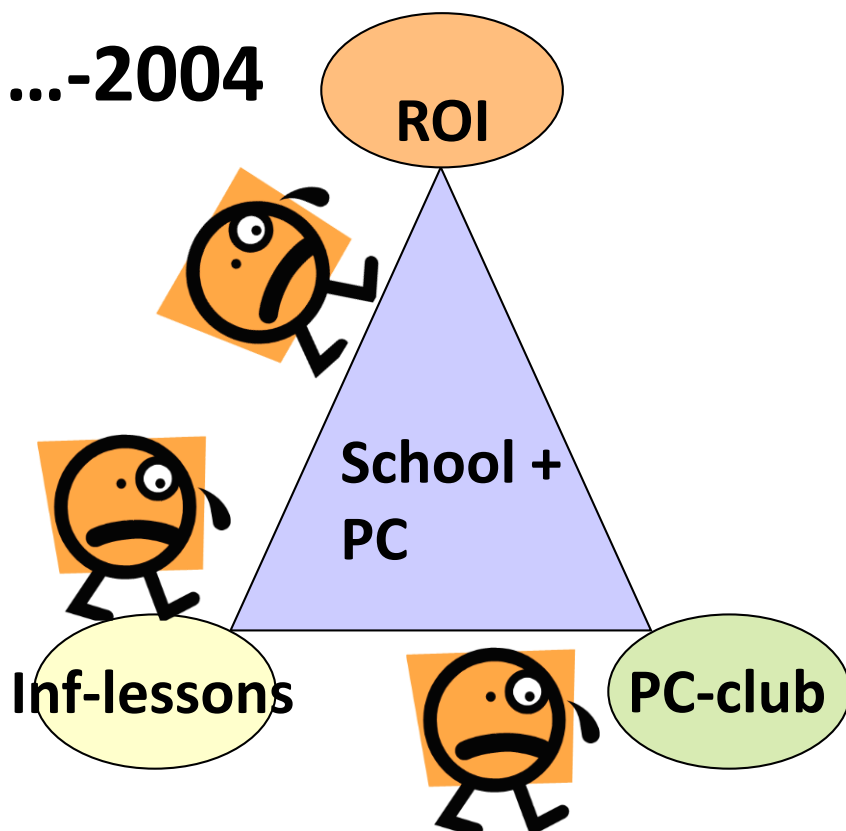
- 1985-1995: PC for separate groups of pupils
- 1995-2000: PC-classes in IT-schools (10 000)
- 2001-2005: PC-classes in each school (60 000)
- 2006-2010: I-net and open free edu- content ( $\cong$  N TeraBt) for each school (60 000)
- 2011-2020: : I-net and open free edu- content and Edu-channel for each pupil at home (100 mln)

## State edu- standard in informatics (SES Inf)

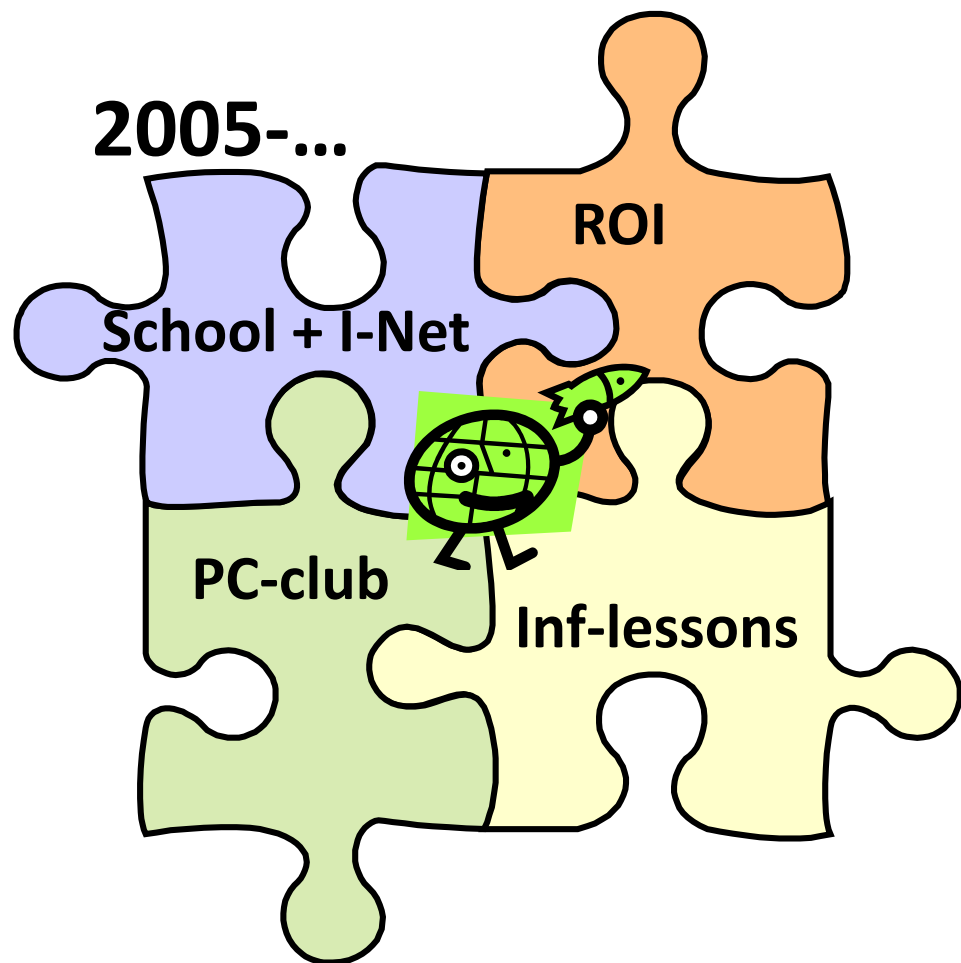
- 1985: academic Earshov and first curriculum of Inf-school-subject, Inf-lesson in secondary school → 1988 First RusOI → 1989 First IOI
- 1994: new stage – PC in RusOI and in IOI → Automatic test System (ATS)
- 1998: First State Edu-curriculum in Russia → new level of Olympiads Tasks
- 2000-2005: I-Net in Olympiads → 1-SES Inf in Russia
- 2005-2010: mass I-Net pupil IOI-cooperation → 2-SSES Inf in Russia

# SSES and right of pupil in RusOI

...-2004



2005-...



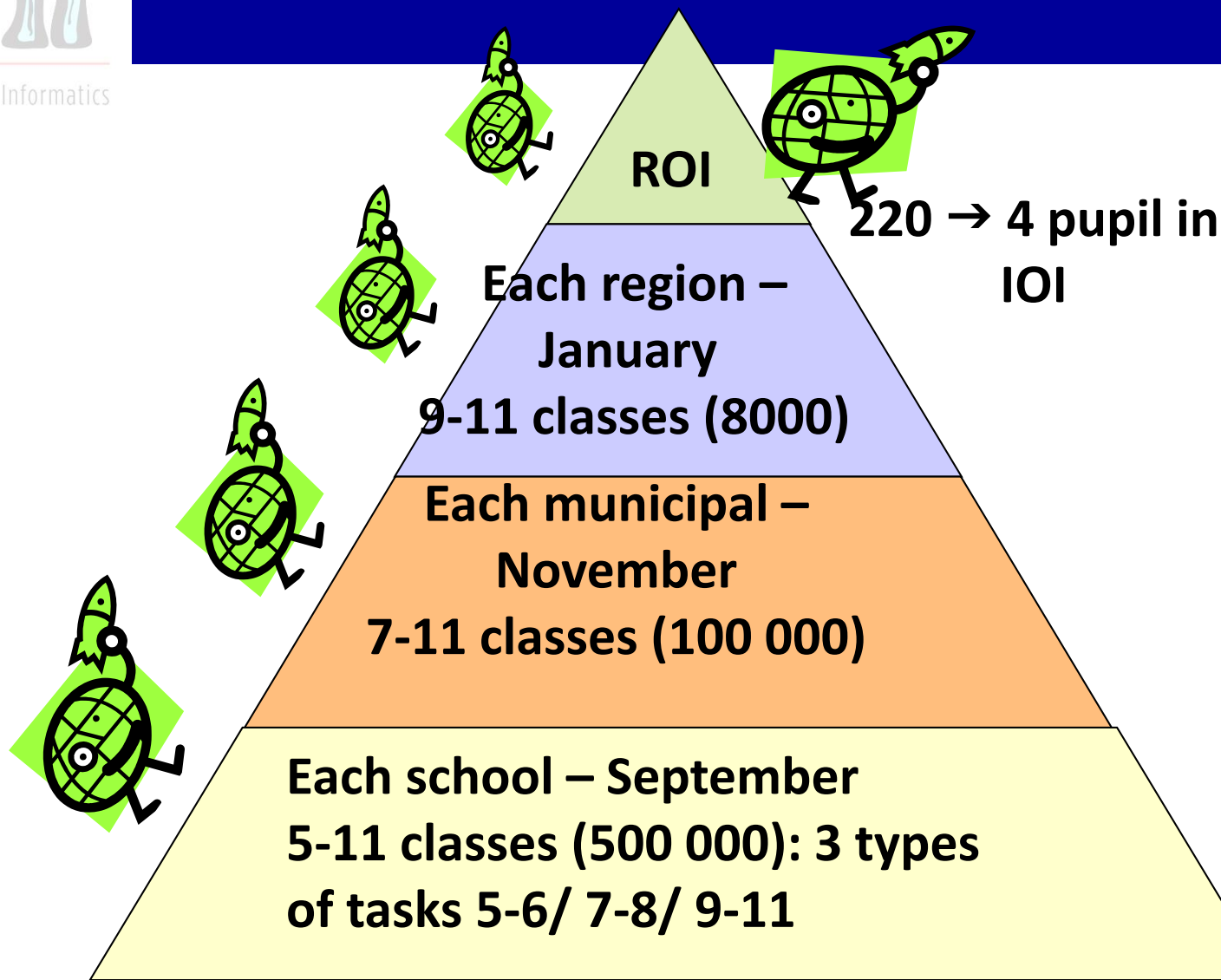
# Problems in right of pupil in RusOI

- Village schools 50% pupils
- Village schools: no Inf-teachers high quality
- 84 regions in Russia: different activity in RusOI
- 60 000 schools and only 1000 RusOI-coachers in Inf
- Their are no school of Olympiads reserves
- Special lives-schools are only academic-cities

# What do we do?

- SES as guaranteed right in RusOI for each pupil
- IT in each school
- Net-Cooperation and methodical support Inf-coachers and Inf-teacher
- Open Internet training system in RusOI
- State guaranteed 1 tour RusOI in each school
- I-Net support 2 tour RusOI in each Region
- State rating -BD all contestants in Russia in 3 tour RusOI
- State guaranteed to winners and pressers of 4 tour RusOI in budget high education
- 100 tech- parkas in Russia at 2020 with school of Olympiads reserves

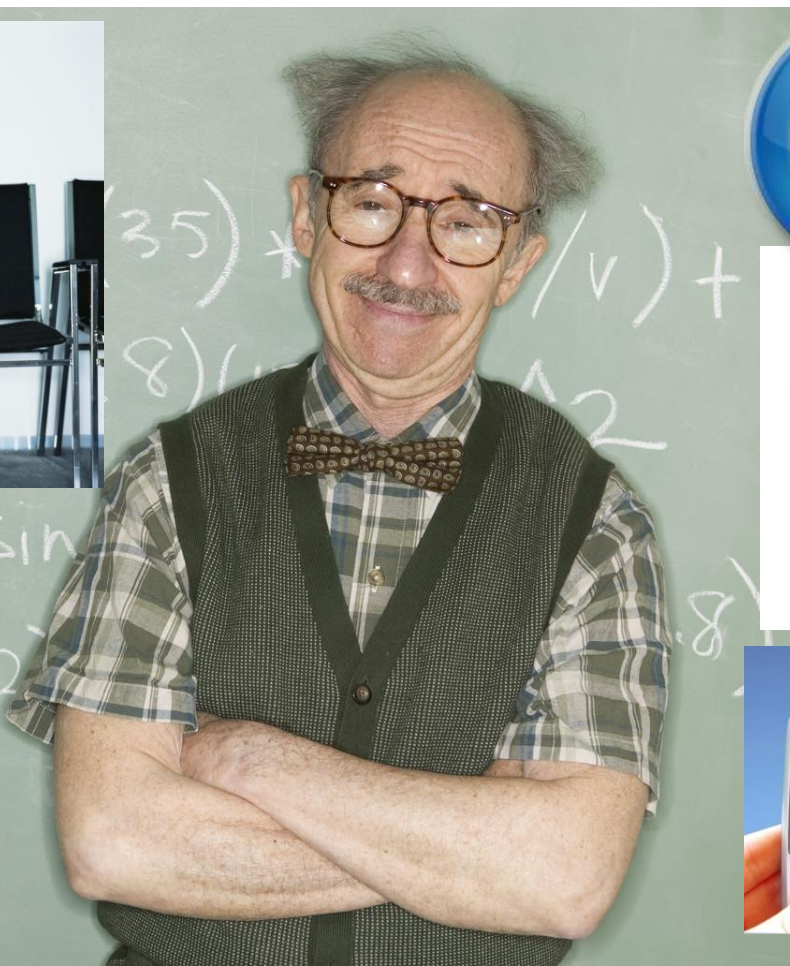
# ROI - IOI







## Part 2. Teachers in RusOI





# Inf-teachers/primary level



**Lessons in primary SCHOOL  
Courses in 5-6 classes**

- **Algorithm**
- **Logics**
- **ICT**
- **[www.School-collection.edu.ru](http://www.School-collection.edu.ru), Part  
“Informatics” 2-6 classes**



# Inf-teachers/ secondary level

## **SES Basics school (7-9 classes):**

- **SES Math (7-9)**
- **Algorithms**
- **Programming language and compilytors**
- **ICT**
- **I-Net**



## **SES Secondary school (10-11 classes - special courses):**

- **SES Math special courses**
- **Algorithms and Programming**
- **Testing systems**
- **ICT**
- **I-Net**



# Inf- Coachers / Profile level

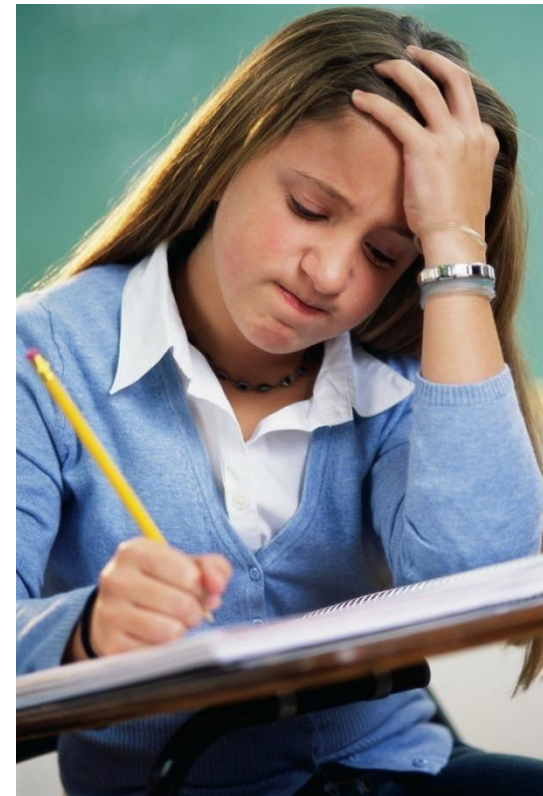
## Who are coachers?

- **Winners IOI – students**
- **Pressers ISM – students**
- **Assistants Math and IT cafes in university**
- **Inf- tiachers - Trainers of RusOI – teams**
- **Signs in Informatics – authors of Olympiads tasks**



# Individual courses and Sam self-edu / Olympiads level

Training with coacher – Training sessions - Sam self training  
RusOI- Collection tasks and IOI – collections tasks/ Internet – tours –  
case of book – portal RusOI – web-sites IOI – I-Net tours

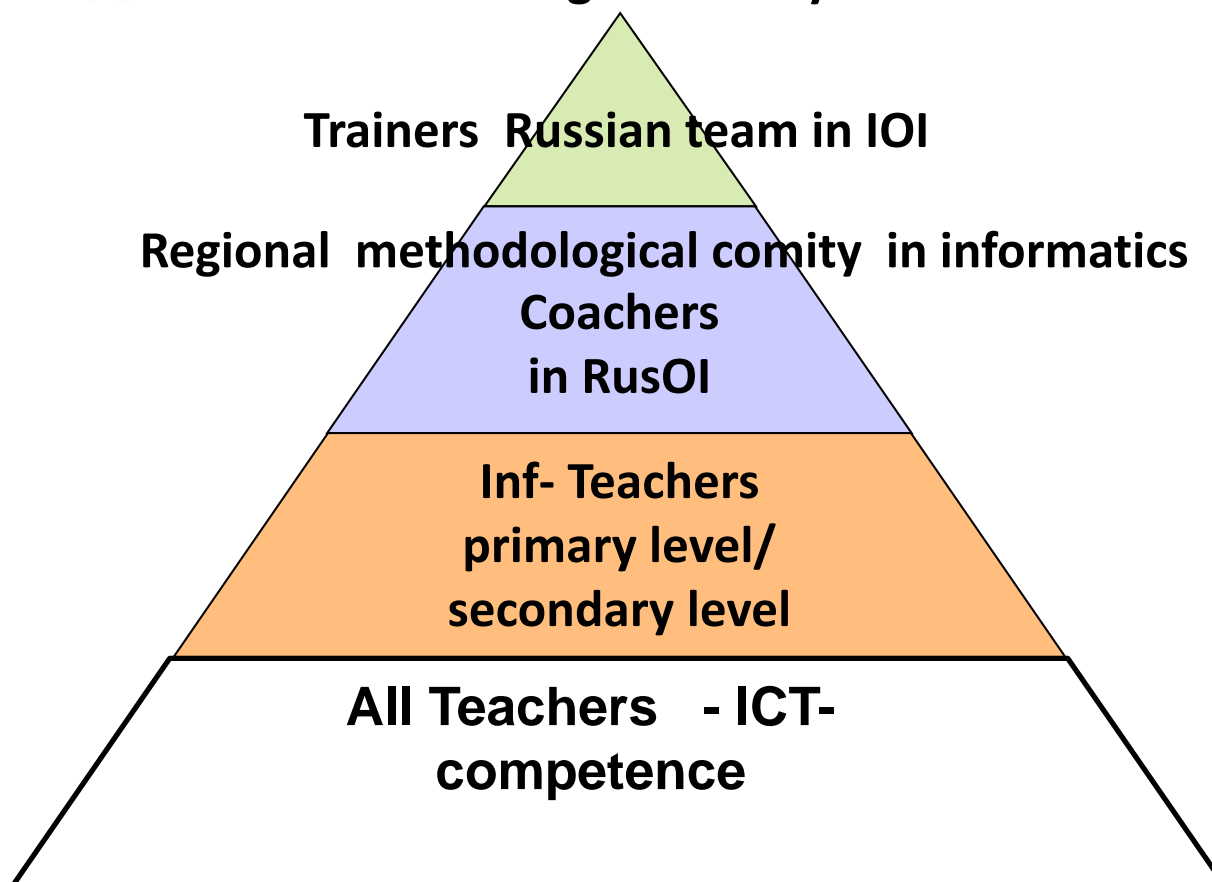






# Training Pyramid in RusOI

**Central methodological comity in informatics in Russia**



# RusOI and Russian innovative economy

- Innovative yang since
- Olympiads Winners as innovative potential of Russia
- Tasks
  - Including in school courses and school books innovative knowledge's
  - Including IT in all school subjects (comp lab)
  - Including open Digital edu- resources in each school subjects
  - I-net for each pupil in the school and at home



# ICT partners of each teacher and pupils in the school

**Math, Physics, Geography,  
Natural Science researching  
Computer modeling courses**







ICT partners of each teacher  
and pupils in the school

**Technology, Robot technic,  
AutoConstration System,  
Automatic system control**

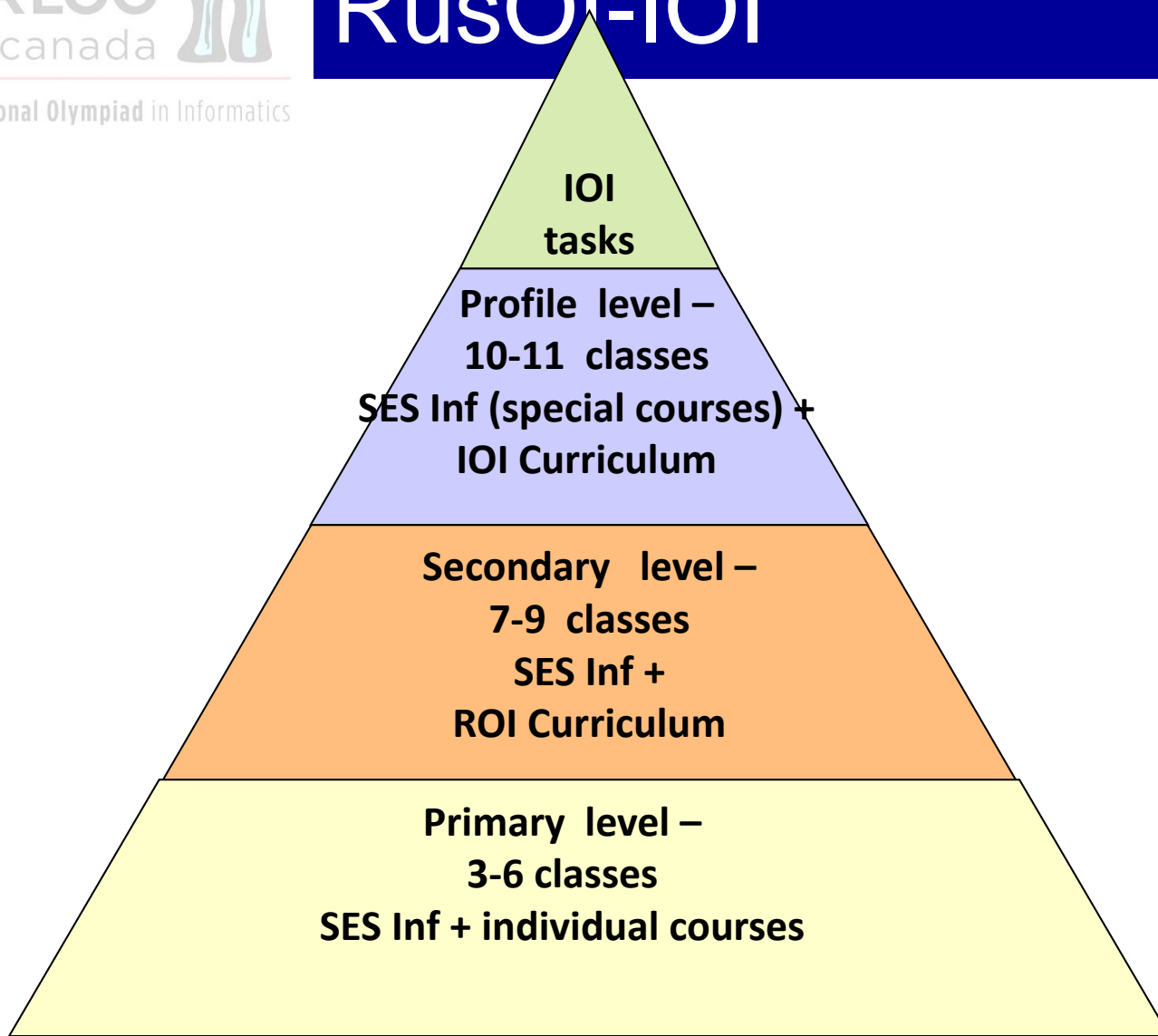


# ICT partners of each teacher and pupils in the school

**Special courses: Systems of Safing information, Data Base, tele technology, Economic and Statistic courses**



# Part 3. Curriculum RusOI-IOI





# Primary level – 3-6 classes RusOI Curriculum

## Examples !

1. Mathematic and Informatics.
2. Introduction to Algorithms.
3. Programming basics .
4. Computer arithmetic .
5. Operating Systems basics.
6. Programming spaces.
7. Examples of Calculations and Modeling.
8. Introduction to Network Technologies.



## Secondary level – 7-9 classes - RusOI Curriculum

### Tasks !



1. Mathematical basis of Informatics.
2. Developing and Analyzing of Algorithms.
3. Programming in tasks.
4. Computer Literacy.
5. Operating Systems.
6. Programming Technology in tasks.
7. Tasks of Calculations and Modeling.
8. Network Technologies in Sam self training.

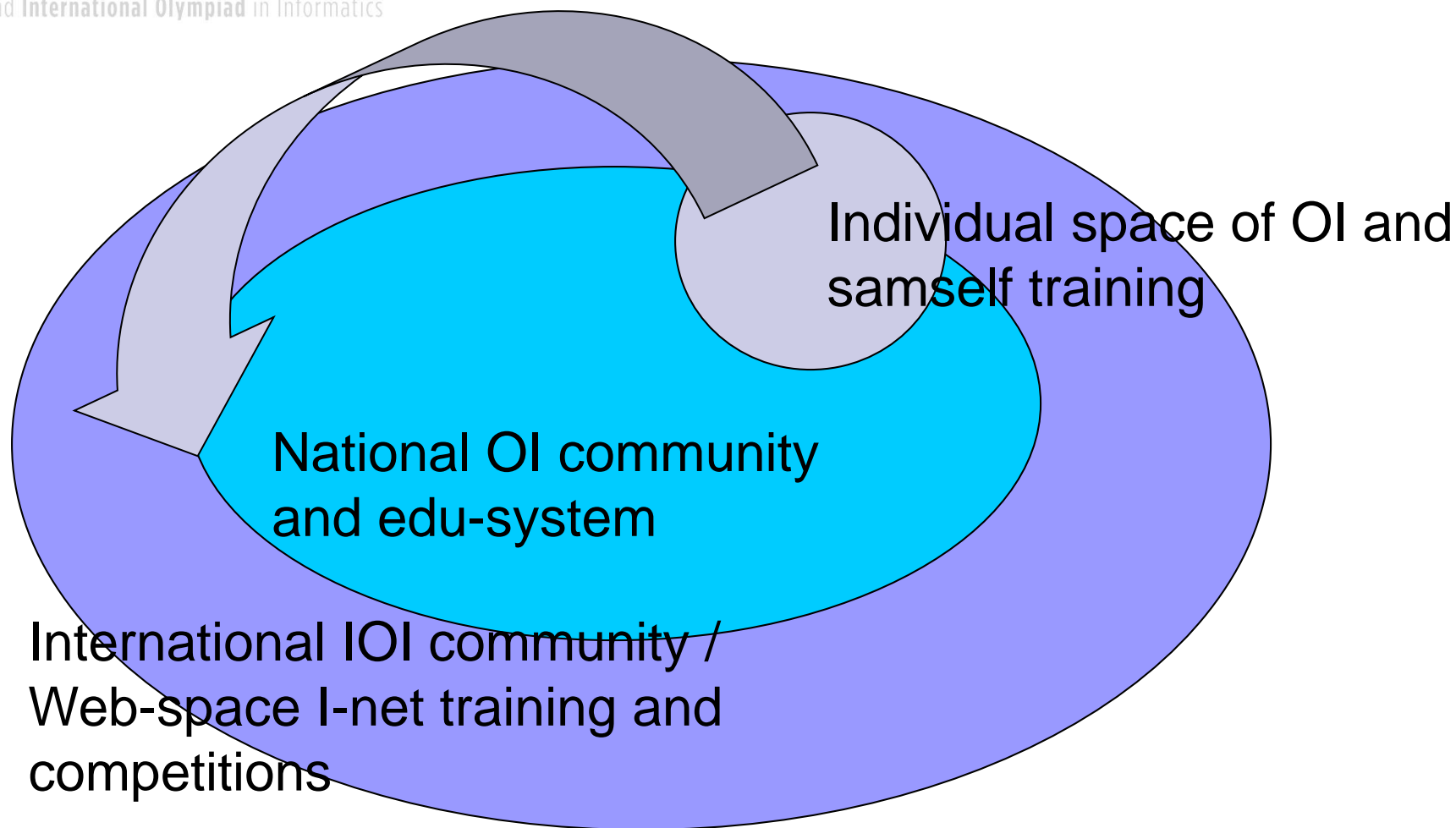
# Profile level – 10-11 classes - IOI Curriculum

Training space !



1. Mathematical Fundamentals of Informatics.
2. Developing and Analyzing of Algorithms.
3. Programming Fundamentals.
4. Computer Literacy.
5. Operating Systems.
6. Basis of Programming Technology.
7. Fundamental Methods of Calculations and Modeling.
8. Network Technologies and communication.

# Open World Space IOI ( OWS IOI)



# IOI OWS for Schools and Students

## PROBLEM

*Make Open World Space of Olympiads in Inf (in English language) as*

- *collections links in web-massive Tasks National Ol and IOI*
- *web-sites I-Net competitions*
- *IOI students community and coaches community (IOI conference with tele translations or video connection )*
- *IOI Internet-magazine for schools in the world (international news of NOI and IOI)*



# Thanks!

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