

III  IYNT 2015

*Information booklet*



# Greetings from Evgeny Yunosov

IYNT, Founder & Chairman of the General Council  
IYPT, Founder & Honorary Vice-President  
Foundation for Youth Tournaments, president

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I greet all the young participants of the tournament. Before coming to Belgrade, Serbia's beautiful capital, you did a fantastic job of solving the problems for the IYNT. You are now ready to enter the competition. You will be facing the challenges thrown by your competitors and in turn you will throw your challenges at them. In this competition, the reward for you will be the truth that you inevitably will find in the discussions.

I greet all the team leaders. What brought you and your students to the IYNT is your enthusiasm, your desire to inspire your students with new ideas, and your personal interest to experience everything new. We hope that your participation in the IYNT offers you many happy moments of cooperation with your students, gives you a firm feeling of professional growth, and helps you to find an international network of colleagues who share your teaching ideals. We welcome you as our true allies.

I greet all my other colleagues, members of the Jury and independent experts. You have a very fortunate role — you would witness how the spark of curiosity, an inherent value for youth, turns into a bright bonfire of active interest to the surrounding World.

I would like to remind you about the most distinctive features of the IYNT.

The main feature of the IYNT is naturally its problems. The IYNT problems concern the natural sciences as a whole. It would be an arbitrary choice to divide them into physics, chemistry, or biology, for it is often appropriate to start studying the World without mapping boundaries. Our problems are suggested by various contributors and then selected by an expert commission. Something unique in the IYNT is that our participants are asked to formulate their own problem statements, and the quality of these statements will be graded by the Jury. These are the problems *Invent Yourself* to which we devote a separate Science Fight 3.

All problems for the IYNT require long term work and dedication. The problems for the 3rd IYNT 2015 were released just after the closing ceremony of the 2nd IYNT 2014 in Kyustendil. Not only it gave you opportunity to thoroughly work on these problems, but also allowed to use these problems at the local competitions at the level of a region or a country.

The IYNT is a competition for teams rather than individual entrants. It encourages student cooperation when they solve the problems, and allows our participants learning about the team work. A cooperative form of work promotes involvement of students with different skills, abilities and interests.

A Science Fight, in which the team presents itself as a whole, reflects competitive features of the IYNT yet is important to manifest the spirit of partnership inherent in the tournament.

Such features as the introduction of teams before the tournament and the Captain's Contests will strengthen the spirit of solidarity and responsibility. It is for the first time when the Captains will be truly responsible for the order of performances in the SF 4 and onwards.

The IYNT builds on the principles and vision of our sibling competition, the IYPT. The IYNT's new features make it ever more attractive for the younger participants. These are the SF 3 on the problems *Invent Yourself* and the SF 4 on the additional experimental problems.

The movement of youth tournaments, such as the IYNT and the IYPT, unites all those who consider the education and research as the most important values in life. Our movement unites those for whom the passion for the pursuit of science is a priority. Such solidarity is especially important in today's increasingly pragmatic and consumerist World.

I thank the team of local organizers and our talented colleague Nikola Srzentić who ensures a memorable 3rd IYNT in Belgrade.

I sincerely hope that regardless of the points you earn, you would experience a true pleasure to participate in the IYNT.

Good luck!

# *Greetings from Ilya Martchenko*

IYNT, Speaker of the General Council  
IYPT, Treasurer & Member of the Executive Committee  
University of Fribourg, affiliate researcher

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Dear colleagues,

I am pleased to welcome all team members, team leaders, independent jurors, experts, visitors, and of course the local organizers of the 3rd International Young Naturalists' Tournament in Belgrade.

The IYNT attracts new nations each year. We welcomed the first Serbian team during the previous, second IYNT in Kyustendil. We are delighted that Serbia then became the wonderful host of our competition in 2015. Now in Belgrade, we are happy to see two new countries joining our movement, China and Croatia.

The IYNT continues its journey across the planet from Turkey in 2013, to Bulgaria in 2014, now to Serbia in 2015, and next to Iran in 2016.

The IYNT is a very special competition. It appeals to an audience younger than most other science competitions yet sets very high benchmarks and is renowned by its thrilling problems and a vibrant community of friends.

In his 2012 decision to establish the IYNT, Evgeny Yunosov set a semi-explicit goal for the IYNT in attracting new nations to the International Young Physicists' Tournament, as the IYNT participants come of age and would be willing to enter the IYPT in their last one or two years in high school. We hope that Serbia and Turkey will be the first among such participant nations at the 29th IYPT in Ekaterinburg, Russia.

The IYNT will teach you a plethora of real life skills such as public speaking, defending your results, respecting deadlines, communicating and writing in languages other than your L1, setting goals, bringing projects to the ultimate end, and taking decisions under major time constraints. All such skills will be invaluable in your future lives.

When preparing to the IYNT and when entering the competition now, you may learn how real scientists tackle different experimental, theoretical and organizational problems. Setting priorities and doing prolonged experimental investigations are among the skills that are important in any career.

I hope you will enjoy your time in Belgrade and that the 3rd IYNT 2015 becomes a very special experience for your curious minds.

I would like to thank our partners at the Regional Center for Talented Youth Belgrade II who have brought together a very special Local Organizing Committee in the city of Belgrade. I would like to thank the Chairman of the LOC, Nikola Srzentić, as well as all of his volunteers, colleagues and assistants.

I would like to thank our Situation Center and all members of the General Council for the hard work when preparing the competition itself. I would like to welcome and greet our new colleague, Hieorhi Liašnieŭski, who takes over scoring and processing the competition results.

I would like to express my gratitude to everyone who may consider herself or himself a part of the IYNT and I look forward to meeting you at the Science Fights.

I very truly hope that the IYNT 2015 may become your experience of a lifetime, and would help you shaping your future interests.

I wish you to have a fantastic competition and I wish you good luck.

# *Greetings from Nikola Srzentić*

IYNT, Chairman of the LOC 2015  
Regional Center for Talented Youth Belgrade II, president

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Dear Colleagues and Friends,

We cordially invite you to the International Young Naturalists' Tournament which will be held in Belgrade, Serbia, on June 19—25, 2015.

We are expecting an excellent international attendance to the IYNT and we hope that the dynamic spirit of Belgrade will provide a stimulating background for scientific and social exchange amongst young scientists from all over the world.

We also hope that through this meeting stronger ties between young scientists and their countries can be fostered. The host institution, Regional Center for Talented Youth Belgrade II, has made an effort to provide excellent organization of the 3rd IYNT and enable a pleasant stay in our capital city.

In Belgrade, you can enjoy the true Balkan beat and experience the pure energy in the streets in each moment of the day. The Serbia's capital city is fascinating and is full of vitality, cultural diversity and culinary delights. The warmth shown by local people, their desire to share their culture and the efforts made to make your stay as pleasant as possible will never be forgotten.

On behalf of the Local Organizing Committee I wish you all a very warm welcome and look forward to seeing you in Belgrade in June 2015.

# *Greetings from Andrei Klishin*

IYNT, Chairman of the Situation Center  
IYPT, juror & team leader of United States team  
Massachusetts Institute of Technology, student

*aklishin@mit.edu*



Dear entrants, team leaders and guests,

It is my pleasure to welcome you to the 3rd International Young Naturalists' Tournament in Belgrade.

As the Situation Center Chairman, I interacted with many of you over phone and email over the last few months, managing registration and pre-registration, clarifying the regulations and extensively consulting with the General Council and LOC across the time zones. Recently I asked myself why I am doing all this, why do I want to be involved in this young competition. It is true that participation in the IYPT gave me my few first trips to foreign countries. The experience of being an IYPT competitor and a team leader is already imprinted in my résumé, taking even several lines. Isn't that enough? But for some reason, I keep spending hours over Skype sessions, emails, documents, graphics, software and websites in a whole range of languages. This means that there is probably something else important about the new, Naturalists', tournament.

The public presentation of the Tournament rarely if ever uses the word "crowdsourcing", but that's exactly what I would use to describe my job. We, the organizers, can promise you a great Tournament experience, but we cannot make it happen. We do a lot of programmatic work, we prepare the venues, we update regulations and protocols, we invite the guests, jury members and technical staff. We create the platform and structure. But what actually makes the Tournament great is you, the group of people from different parts of the world who come to participate.

The tournament paradigm that Evgeny Yunosov envisioned in the late 1970s takes the best from both the scientific Olympiads and conferences. We give you a unified set of problems, exactly the same for each country, and you all prepare your own independent solutions. You have to tell your solutions to others, you have to discuss, you have to defend your opinion and thus prove yourself. Just like in the real adult science, just like in the real world.



The high international quality of the IYNT is truly crowd sourced. Every day we communicate across languages, countries and continents. The IYNT does not just bridge the gaps between the natural sciences, but fills the spaces between cultures and educational systems and shortens the geographical and political distances in the big global world.

I work for this Tournament because I sincerely believe in the fundamental values that were clearly defined from the onset. Quoting the General Council webpage, “We shape our commitments and make decisions by standing firmly behind a small set of core values: openness, continuity, stability, resilience against disruptive challenges, and high international quality in any aspect of the IYNT.” The IYNT has survived several disruptive challenges, the IYNT stays open to all new entrants and the IYNT most carefully, forcefully holds onto its history and roots. The IYNT amazes, inspires and teaches me how to run open, crowd sourced organizations. I couldn’t expect such a comprehensive apprenticeship in ideology and administration for my further, undoubtedly international, career.

Though we can hide the champions of organization behind their titles, I want to reserve a special thank-you to Ilya Martchenko and not let him hide behind the mask of yet another one “Member of the General Council”. Even though Ilya delegated direct communication with the teams to me, he remained readily available to me with his comments, opinions and vast expertise at literally any hours of the day. Over the last several years, Ilya has been a wonderful mentor in the history of IYPT and IYNT, in coordination and management, in scientific career and personal questions. Every time I had a doubt or an urgent problem, it was Ilya who ensured the stability and resilience of my personal and professional activities. Through his teaching I believe that I can now handle crises much better. To me, Ilya, himself a former participant-turned-organizer exemplifies all the most important values of an international coordinator, and I think we are all very fortunate to have him.

Lastly, I would urge you to remember what you did in the preparation for this Tournament and at the Tournament itself – you did Science. Don’t treat the scientific method as just a noble idea, but treat it as a quite literal method, a quite literal toolbox. Now you are trying to solve at the same time problems from physics, biology, chemistry, astronomy. In a few years the problems you face may look very differently. But if you look at the new problems close enough, if you split them into small parts, you will get a lot of intuition how to solve them from your background in diverse sciences. This is an extremely important skill. Divide and conquer!

Onwards!

# *Greetings from Dina Izadi*

IYNT, Member of the General Council  
Ariaian Young Innovative Minds Institute, director  
IUPAP Working Group 5, member  
IYPT, ICYS, IJSO, IPT, INST, IOC member

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Dear All IYNT 2015 Participants,

The 3rd IYNT is hosted by Regional Center for Talented Youth Belgrade II to promote young students to participate at young scientists events.

Young people gather from several countries with various cultures to learn much from each other. So making a friendship and appropriate atmosphere will help them to show their novelties more. AYIMI has engaged many students in practical scientific activities from several years ago and now students in Iran participate in IYPT/AYPT/PYPT/IYNT/IJSO and several other tournaments and competitions. We are going to promote STEM education in order to persuade young people to find their jobs according to their interests.

Getting students to study effectively, even under difficult circumstances, is one of the most important challenges in our real world. Teaching should be viewed as an art to motivate students to look around themselves carefully in order to find the reason behind each phenomenon that happens in nature. We believe that education, creativity, and empathy strengthen any community.

Bill Gates was recently speaking in Washington, D.C. at the American Enterprise Institute, and said that within 20 years, a lot of jobs will go away, replaced by software automation. He said: "20 years from now, labor demand for lots of skill-sets will be substantially lower". Then in this new economic climate we should strive to find a way to progress from science and technology to innovation as the way to ensure a prosperous future.

I hope IYNT such as IYPT find its way as strong as possible and we should all thank Evgeny Yunosov for introducing such interesting tournaments in educational systems.

AYIMI is glad to host IYNT 2016 in Iran and invites all young people, team leaders, team members and observers to visit this country with one of the world's oldest civilization.

# General Council of the IYNT

**Evgeny Yunosov**

**Chairman of the General Council**

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IYNT, Founder & IOC Chairman

Foundation for Youth Tournaments, President

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**Ilya Martchenko**

**Speaker of the General Council**

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**Leonid Markovich**

**Member of the General Council**

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Belarusian Young Physicists' Tournament, chairman

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# Local Organizing Committee 2015

## **Nikola Srzentić**

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## **Milan Tepić**

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# *IYNT 2015 Execution Task Force*

## **Andrei Klishin**

Chairman of the IYNT Situation Center

Responsibilities: pre-registration, guidance, monitoring, data management, regulatory compliance, IYNT execution

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## **Hieorhi Liaŝnieŭski**

Chairman of the Scoring Commission

Responsibilities: scoring, ranking, procedure, Science Fight administration, drawing lots, IYNT execution

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## **Andrey Kravtsov**

Chairman of the Procedure Committee & SF 4 Prep Group

Responsibilities: procedure, Science Fight 4 management, preparation of additional problems, administration, IYNT execution

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## **Ilya Martchenko**

Speaker of the IYNT General Council

Responsibilities: operational decisions, budgeting, briefings, continuity, stability, compliance, selection and preparation of main and additional problems, regulations, protocols, problems for Captain's Contests, booklet preparation, IYNT execution

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## **Evgeny Yunosov**

IYNT Founder and Chairman of the GC

Responsibilities: global and strategic decisions, selection and preparation of main and additional problems, regulations, protocols, drawing lots, problems for Captain's Contests, booklet preparation, IYNT execution, continuity, stability

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## *Participant Teams*



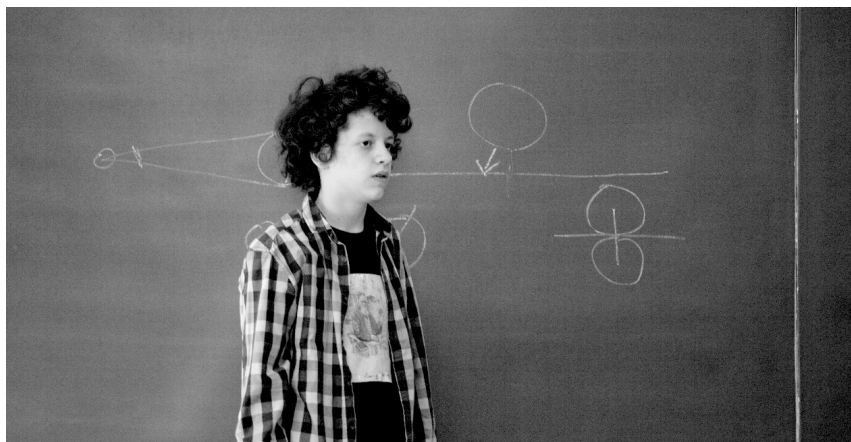
**Belarus-Spectrum:** Antony Kolb (captain), Maryia Valoshyna, Fiona Kukharenka, Gleb Penyazkov, Vladimir Paliakov, Kiryl Mikhailovich, Oscar Rabinovich (leader), Alena Kastenka (leader.)



**Bulgaria:** Martin Polomski (captain), Vladimira Irincheva, Marko Ivanov, Martin Nikolov, Enrico Goranov, Lili Komova, Mladen Matev (leader, not in the photo), Maria Geneva (leader, not in the photo.)



**China:** Wang Yuhao (captain), Zeng Xiangjian, Cai Kangjia, Zheng Luxiao, Shi RuiKang, Zhu Yihang, Wang Sihui (leader, not in the photo), Zhang Yujuan (leader, not in the photo.)



**Croatia:** Tibor Basletić Požar (captain, not in the photo), Luka Bulić Bračulj, Matija Martinčić (not in the photo), Klara Stojčević (not in the photo), Fran Žužić (not in the photo), Danko Marušić (leader, not in the photo), Lucija Papa (leader, not in the photo.)



**Georgia-Georgians:** Gvantsa Tsutskishvili (captain), Toma Rtveliashvili, Diana Sokhashvili, Giga Khinzanishvili, Nino Kimadze, Mate Sharvadze, Guram Mikaberidze (leader, not in the photo), Nika Sabashvili (leader, not in the photo.)



**Russia-MG 12:** Viktoriia Glazkova (captain), Alina Alkova, Mark Tsioma, Arina Kim, Vladimir Fisiura, Daria Petukhova, Elena Chernova (leader, not in the photo), Natalia Vasyova (leader, not in the photo.)





**Russia-Voronezh-1:** Aleksei Krasikov (captain), Maxim Morgachev, Fedor Patruiev, Evgeniya Elfimova, Nadezhda Dmitrienko, Anna Patritskaia, Dmitry Zhukalin (leader), Nataliya Lepeshkina (leader.)



**Russia-Voronezh-2:** Makar Utochkin (captain), Visha Zakhra Nakvi Saida, Daria Ananeva, Lev Sidelev, Daria Stekolnikova, Danil Kozlov, Tatiana Besedina (leader, not in the photo), Svetlana Derevyagina (leader, not in the photo.)



**Serbia-1:** Luka Jevtović (captain), Anja Kovačević, Nikolina Marković, Teodora Ristoski, Milica Conić, Tara Čolić, Nikola Srzentić (leader, not in the photo.)



**Serbia-2:** Olgica Maksimović (captain), Una Janković, Aleksandar Ristivojević, Stefan Huber, Dean Polimac, Dimitrije Rajčić, Aleksandra Dimić (leader, not in the photo.)

## Team Leaders



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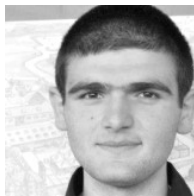
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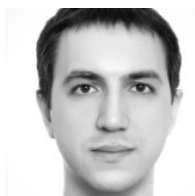
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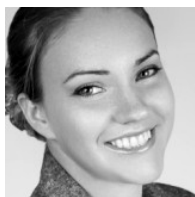
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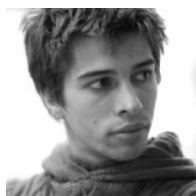
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# Problems for the 3rd IYNT

*Nach dem Spiel ist vor dem Spiel.*  
Sepp Herberger

## 1-3. Invent yourself

Formulate an open ended problem focused on a particular topic, and then solve this problem.

### 1. Invent yourself: Physics

Topic: precise weighting. Study the physical effects that influence precise weighting of solid objects with a mass of 10 to 100 g.

### 2. Invent yourself: Biology

Topic: microorganisms. Suggest an investigation of such cases that allow for a quantitative study and reproducible measurements.

### 3. Invent yourself: Chemistry

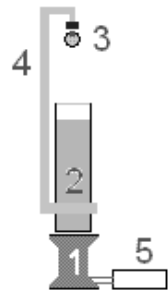
Topic: chemistry of potatoes. The 'life' of one potato tuber, from its growth in soil, to storage, and finally to human use such as boiling or production of chips, is a lengthy chain of chemical processes. Select and study one or several links of this chain.

## 4. Sunset

The visible Sun disk touches the horizon and after a particular time interval disappears behind the horizon. What is the duration of this time interval? Explain the optical phenomena observed during a sunset.

## 5. Falling ball

An electronic balance (1) is connected to a PC (5) in order to record the time dependence of the measured weight. A light frame (4) is mounted on a tall beaker (2) filled with water. The frame has a holder (3) allowing controlled release of a small ball such that it falls into the water. The beaker is placed on the balance as depicted in the Figure. Investigate how the readings of the balance reflect the different phases of the motion of the ball.



## 6. Disappearing ink

Suggest a chemical formulation for the ink that would disappear after used to write a text. What parameters determine the time when the text becomes invisible? Is it possible to process the paper in such a manner that the text appears again?

## 7. Pancakes

It is argued that pancakes can be so good looking that they ignite appetite by their appearance only. Suggest grounded scientific criteria to parameterize how appetizing the pancakes are.

## 8. Library

One person has decided to download all of the fiction existing in the English language and store it on a single USB stick. He expects to find or generate the respective text files, compress them, and then index them conveniently. Is this ambition realistic? Suggest a plan to approach this goal and solve a partial problem of this plan.

## 9. Distances in open space

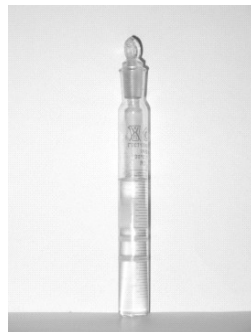
How do astronomers measure distances between the planets of the Solar System, between the stars in our Galaxy, or between the galaxies? Determine the distance between the two space objects of your choice.

## 10. Ice hole

You have drilled two ice holes in a frozen lake on a frosty winter day. One ice hole is close to the shore, while the other ice hole is far from the shore. Surprisingly, the height difference between the ice surface and the liquid water is different for each hole. How can you explain this? How can one use this height difference to determine the local ice thickness?

## 11. Puzzle in a beaker

A researcher decided to measure the diffusion rate of ammonia in gelatin. He added some magnesium sulfate to the hot gelatin solution which set to a gel on cooling. He then poured some aqueous solution of ammonia onto the gel and left the beaker for two days. The researcher was surprised to discover white layers of precipitate in the beaker, as depicted in the Figure. Explain this phenomenon and determine what does the number of bands depends upon.



### **12. Structure of a hair**

The hair of various animals may significantly differ in their structure. What are these differences and how can you explain them?

### **13. Shining orbs**

Bright and rather unexpected white disks may appear in a photo taken with a flash in a dark room. Explain why such shining orbs appear in the photos.

### **14. Galton box**

In the Galton box, a regular 2D lattice of obstacles disperses a thin flow of falling particles. When falling on the bottom of the box, the particles show a normal distribution. Use various types of particles and different arrangements of the obstacles to find the conditions when the distribution is no longer normal.

### **15. Fly**

A fly can easily walk on a ceiling. How is this possible? Can one find such a ceiling that the fly would be unable to walk on?

### **16. Smoke ring cannon**

Construct such a vortex ring cannon that would shoot with smoke rings on a distance sufficient to hit the chairperson of your Science Fight.

### **17. Starch monsters**

A water suspension of starch is placed on a loudspeaker. Investigate and describe the resulting starch monsters.

The problems are authored by Svetlana Buldygina, Elena Derevyagina, Tatyana Korneeva, Andrei Malykhin, Ilya Martchenko, Evgeny Yunosov. The problem set, including the epigraph, is compiled, prepared and edited by Evgeny Yunosov and Ilya Martchenko. Translated by Ilya Martchenko in Kyustendil.  
August 26, 2014

This official set of problems for the IYNT 2015 is approved by General Council of the IYNT and can be used only at the events endorsed by the General Council of the IYNT.



# *Regulations of the International Young Naturalists' Tournament*

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## **Chapter 1. General information**

### **I. International Young Naturalists' Tournament**

The International Young Naturalists' Tournament (hereinafter the *IYNT*) is a team competition for school students in their ability to solve research problems of natural sciences, convincingly present their solutions, and defend them in scientific discussions called Science Fights (hereinafter *SF*.)

### **II. General Council**

The IYNT is solely governed by the General Council (hereinafter the *GC*) established by the Founding Members of the IYNT. The GC presides over the manner in which the IYNT is held, releases its problems, approves the Regulations and ensures their implementation, and has ultimate authority over

the IYNT competition. The GC establishes other principal Bodies, Centers and Committees of the IYNT, assigns their responsibilities, and appoints Chairpersons. The GC entrusts the Local Organizing Committee with hosting each respective IYNT event.

### **III. Local Organizing Committee**

The Local Organizing Committee (hereinafter the *LOC*) provides board, lodging and premises, and ensures all necessary conditions and facilities to conduct the IYNT competition in the host country. The LOC determines the venue of the IYNT and its schedule in agreement with the GC.

### **IV. Participants**

1. The participants are aged 12 through 16. The age limit is set such that participants of the main league of the IYNT must not turn the age of 17 years during the calendar year of the respective IYNT competition.
2. A Team is composed of six students. The GC may allow participation of smaller Teams. The Team is headed by a Captain who is the official representative of the team during the IYNT. No Team Member can be replaced after the Opening Ceremony.
3. The Team is accompanied by two adult Team Leaders who supervise their Team and work in the Jury.
4. To participate, a Team must pre-register for the IYNT and subsequently fulfill the requirements for registration. These requirements are determined and made public by the GC.

### **V. Agenda**

The agenda of the IYNT includes the following social activities and rounds which are graded by the Jury:

- Opening Ceremony;
- Introduction of Teams via short performances (graded round);
- Drawing lots;
- Taking a group photograph of all participants by the LOC;
- Jury meetings;
- Two Selective SFs with main IYNT problems (graded rounds);
- One Selective SF with the problems *Invent Yourself* (graded round);
- One Selective SF with additional IYNT problems (graded round);
- One Semi-Final SF (graded round);
- One Final SF (graded round);
- Cultural program provided by the LOC;

Extra contests in various nominations (not used in the official ranking of Teams);  
Closing and Awards Ceremony.

## VI. Introduction of Teams at the Opening Ceremony

Each Team introduces themselves in a short artistic performance during the Opening Ceremony. The performance can be of any genre. Team Leaders may participate. The Teams can in particular produce and display a short video about them. The duration of the Introduction is limited to 3 minutes. Exceeding this time limit incurs a penalty.

## VII. Problems

**1. Main problems** are research oriented experimental and theoretical problems in natural sciences released by the GC to the Teams and the general public in advance but not earlier than on the closing day of the previous IYNT. These problems may be used in national or regional competitions recognized by the GC.

**2. Problems *Invent Yourself*** are open-ended questions that ask the Teams to specify and formulate their own problem statements and solve the stated tasks. The general descriptions of these problems are included in the set of main problems. Teams must submit their written statements of the problems *Invent Yourself* to the organizers in the beginning of the IYNT. The submitted statements of the problems are made public.

**3. Additional problems** of the IYNT are not published in advance and are released to the Teams directly in the course of the IYNT. These problems are research oriented and are solved by the Teams during the respective SF.

## VIII. Science Fights

A Science Fight (*SF*) is a meeting of three or two Teams in which the Teams discuss and present their solutions of the IYNT problems. There are five types of SFs in the IYNT which differ in the type of problems, in the agenda, and in the eligibility of Teams to participate.

**1. Selective SFs with main problems** are conducted according to the Standard SF regulations and use the main IYNT problems known to the Teams in advance. All Teams participate.

**2. Selective SF with the problems *Invent yourself*** is conducted according to the Standard SF regulations. Each Team presents and defends their own problems

*Invent yourself*. Only those Teams participate that have timely submitted their original statements of *Invent yourself* to the organizers.

**3. Selective SF with additional problems** is conducted according to the Standard SF regulations with changes in the preparation time and challenge procedure. This SF uses the additional problems released to the Teams shortly before the SF. All Teams participate.

**4. Semi-Final SF** is conducted according to the Standard SF regulations and uses the main IYNT problems. Only appropriately determined winners of Selective SFs participate.

**5. Final SF** is conducted according to the Standard SF regulations with omitted challenge procedure. Main IYNT problems are used. Only appropriately determined winners of Semi-Final SF participate.

## **IX. Jury**

1. The Jury evaluates the solutions of the IYNT problems presented by the Teams and the Team performances in SFs by publicly showing integer Grades. The GC may issue guidelines or grading criteria aimed at improved scoring. Each individual Juror decides on their own Grades and bears sole responsibility over the Grades. No Grade can be corrected retroactively. Each Juror must publicly justify any of their Grades upon the request of Team Captains or the Chairperson.

2. Groups of Jury for SFs are composed of independent experts and Team Leaders such that their Teams do not take part in the respective SF. The Jury is formed by the GC in cooperation with the LOC.

3. One of the Jurors in each Group is the Chairperson who conducts the SF and ensures that the Regulations are respected. The Chairperson is appointed by the GC or by an accredited Committee before the beginning of the SF.

## **X. Official language**

The official language of the IYNT is English.

## Chapter 2. Science Fights

### I. Standard Science Fight regulations

1. Each SF in each Group is conducted by the Chairperson who facilitates discussions, announces the ordering, manages time, clarifies the Regulations and ensures their implementation. In the beginning of a SF, the Chairperson asks Jurors to introduce themselves, and asks Team Captains to introduce their Team Members. At the SFs from the fourth Selective SF onwards, the Chairperson carries out the Captain's Contest in the beginning of the SF.

2. In the Groups of three Teams, the SF is carried out in three Stages. In each Stage, each Team plays one of the three roles: the Reporter, the Opponent, and the Reviewer. The roles are assigned in the following order:

| 3 Teams | Stage I  | Stage II | Stage III |
|---------|----------|----------|-----------|
| Team 1  | Reporter | Reviewer | Opponent  |
| Team 2  | Opponent | Reporter | Reviewer  |
| Team 3  | Reviewer | Opponent | Reporter  |

3. In the Groups of two Teams, the SF is carried out in two Stages. In the Stage I, one Team acts as the Reporter, and the second Team is divided into two independent sub-teams that take the roles of the Opponent and the Reviewer, respectively. The division takes place before the challenge procedure in the beginning of the Stage. Team Captain decides how the Team is divided and appoints a temporary acting Captain for the sub-team from which he or she is absent. In the Stage II, the Teams change their roles. The roles are assigned in the following order:

| 2 Teams | Stage I            | Stage II           |
|---------|--------------------|--------------------|
| Team 1  | Reporter           | Opponent, Reviewer |
| Team 2  | Opponent, Reviewer | Reporter           |

4. In the first three Selective SFs, the sequence of performances is determined by the scheme established at the Opening Ceremony in drawing lots. In the fourth Selective SF, in the Semi-Finals, and in the Finals, the sequence of performances is determined via Captain's Contest conducted by the Chairperson in the very beginning of the SF. The winner of the Captain's Contest determines the roles of all Teams in the Stage I and thus the sequence of performances in the whole SF. The Captain does not interact with their Team during the Captain's Contest and when deciding on the sequence of performances.

5. Only one Team Member takes to the floor as Reporter, Opponent or Reviewer on behalf of their Teams. All other Team Members may work as assistants, offer technical support to the presenter, pass handwritten notes and if allowed by the Chairperson can make short remarks.
6. In the course of the SF the Members of a Team communicate only with each other. They have no right to use mobile data transfer and other technical means to communicate with anyone outside their Team, in particular Team Leaders.
7. Prior to announcing their Grades, Jurors have no right to express their judgment or opinion. Jurors have no right to explicitly examine textbook knowledge of Team Members and pose the same question to several teams at once.
8. Before the Jurors show their Grades, the Chairperson checks that each Juror has filled and signed their individual protocol and has clearly recorded their Grades. In case of any discrepancy between the protocol and the displayed Grade, the protocol is considered correct.
9. Chairperson and Team Captains can ask any Juror to justify any of their Grades, in particular the extreme Grades.
10. If a Team does not show up for a SF, the Chairperson reports to the GC. The GC establishes the whereabouts of the Team and may resolve to conduct the SF without the absent Team as a two-team SF. If the Group in question is planned as a two-team SF, the GC may introduce a one-time amendment in the distribution of Teams, upon the discretion of the GC.

## **II. Standard Stage regulations**

1. Each SF is composed of three of two Stages which are composed of separate Phases according to the agenda in the table below. In a two-team SF, each Stage begins with one of the Teams dividing into two independent sub-teams, of which one acts as Opponent and other acts as a Reviewer. Asterisk (\*) denotes the positions where Standard Stage regulations should be amended for particular types of SFs.

| #   | Phase  | Duration      |
|---|--|---------------|
| 1*  | <b>Challenge*</b>  | 2 min         |
| 2*  | <b>Preparation</b> of the Reporter*  | 3 min         |
| 3   | <b>Presentation</b> of the report  | 8 min         |
| 4   | <b>Clarifying</b> questions of the Opponent to the Reporter                  | 3 min         |
| 5   | <b>Preparation</b> of the Opponent   | 3 min         |
| 6   | <b>The Opponent</b> takes the floor  | 4 min         |
| 7   | <b>Discussion</b> between the Opponent and the Reporter                      | 5 min         |
| 8   | <b>Clarifying questions</b> of the Reviewer to the Reporter and the Opponent | 2 min         |
| 9   | <b>Preparation</b> of the Reviewer   | 2 min         |
| 10  | <b>The Reviewer</b> takes the floor  | 3 min         |
| 11  | <b>Concluding remarks</b> of the Opponent                                    | 1 min         |
| 12  | <b>Concluding remarks</b> of the Reporter                                    | 1 min         |
| 13  | <b>Clarifying questions</b> of the Jury to the speakers                      | 5 min         |
| 14  | <b>The grading</b>   | 4 min         |
| 15  | <b>Concluding remarks</b> of the Jury  | 4 min         |
| 16  | <b>Break</b>   | 10 min        |
| Total for one Stage (no break incl., appx.)     |  | <b>50 min</b> |
| Total for a three-team SF with 2 breaks (appx.) |  | <b>3 h</b>    |
| Total for a two-team SF with 1 break (appx.)    |  | <b>2 h</b>    |

\* 1. In the Selective SF with additional problems, the consecutive challenge by all Teams is carried out in the beginning of the SF. The order of challenges is determined by Captain's Contest, and 10 minutes are allowed for the challenge procedure. In the Final SF the challenge procedure is omitted.

\* 2. In the SF with additional problems, the preparation time is used by all Teams for solving the problem. The preparation time is 45 minutes.

2. The Chairperson must rigorously keep the time limits for each Phase.

### III. Team roles in the Stage

**1. The Reporter** presents an original solution prepared by their Team. The Report contains the basic ideas and methods for the solution, the description of observations and experiments, theoretical analysis, and also clear conclusions. The Reporter must explicitly cite the sources of any ideas, data or theories which are not of own work. The standard visual aids for the report are multimedia slides with graphs, figures, data, mathematical expressions, photos, or videos. Other visual aids may include experimental demonstrations or handout sheets. By the end of the IYNT, the Reporter submits a copy of their

solution (i.e. slides or written reports) to the GC for archiving, and must ensure that the files are safely kept.

**2. The Opponent** presents a critique of the Report, including its contents and form, and leads the discussion with the Reporter. The Opponent justifies their agreement or disagreement with the methods, results, and conclusions presented by the Reporter. The Opponent challenges each aspect of the Report and discusses possible improvements. The Opponent points to inaccuracies and errors in the understanding of the problem and in the solution, but also points to achievements and strong sides of the Report. Whilst the Opposition must focus on the Report only and may not be a presentation of their own solution, the Opponent can cite literature and own results to justify particular criticisms. By the end of the IYNT, the Opponent submits a copy of their opposition (e.g. slides or written notes) to the GC for archiving, and must ensure that the files are safely kept.

**3. The Reviewer** summarizes and assesses the outcome of the debate between the Reporter and the Opponent, and draws weighted and independent conclusions. The Reviewer presents a short evaluation of the performances of two other teams, pointing to their strong sides and shortcomings. As the Reviewer does not select the reviewed problem, he or she thus expresses their critical third-party view on the essential points raised in the debate and concludes this debate. Whilst the Review must focus on the performance of two other Teams only and may not be a presentation of another solution, the Reviewer can cite literature and own results to justify particular opinions. By the end of the IYNT, the Reviewer submits a copy of their review (e.g. slides or written notes) to the GC for archiving, and must ensure that the files are safely kept.

#### **IV. Limitations on Team Members to take the floor**

1. During any single SF (Selective, Semi-Final or Final) any Team Member may take the floor only once.
2. Throughout all SFs taken together, except for the Finals, any Team Member may take the floor in each role only once, i.e. once as Reporter, plus once as Opponent, plus once as Reviewer.
3. In the Final SF, there are no limitations related to earlier performances of individual Team Members. Any of them can however take the floor only once.
4. Penalties are applied if these limitations are not respected.



## V. Rules of challenge and rejection

1. All problems presented in one SF in one Group must be different. This rule has no exceptions.
2. In all SFs, except for the Finals, the Opponent can challenge the Reporter on any problem available for such a SF, except for those problems that:
  - a. the Reporter has previously reported (in earlier SFs);
  - b. the Opponent has previously reported;
  - c. the Reporter has previously opposed;
  - d. the Opponent has previously opposed.
3. The Reporter can reject the challenge. Such a rejection is recorded in the protocol. In such case, the Opponent makes a new challenge.
4. It is allowed for the Opponent to make a new challenge on the problem that has been previously rejected by the Reporter. If the Reporter rejects, this is not counted as an additional rejected challenge.
5. In a situation that no problems are left for a challenge, the restrictions in the p. 2 are lifted in the following order: first d., then c., then b., then a.
6. Throughout all SFs, the total allowed number of rejected challenges not incurring a penalty is **three**.
7. Penalties are applied to the Reporter for rejecting a challenge if the Reporter has exceeded the allowed number of rejected challenges.

## Chapter 3. Grading, Penalties and Results

The rounds of the IYNT lead to the official ranking of the IYNT. In the graded rounds the performance of the Teams undergoes a comparative evaluation by the Jury. The grading reflects whether the Team is successful in their performance.

### I. Preliminary Ranking (*RO*)

Participants of the IYNT can submit solutions of several problems from the set of main problems to the Jury ahead of the competition. National bodies can furthermore submit the results earned by the Teams at preceding national rounds. The resulting Preliminary Ranking (*RO*) can be made public before the drawing lots and is considered only for the drawing lots to allow for a better distribution of Teams. Participation in the Ranking *RO* is voluntary.

## II. Grading parameters

### 1. Grades (*G*)

Each Juror evaluates the Team performance by giving integer Grades *G*. In any SF, the Grades are in the following range:

|                         |               |
|-------------------------|---------------|
| To the Reporter in a SF | from 1 to 30; |
| To the Opponent         | from 1 to 20; |
| To the Reviewer         | from 1 to 10. |

In the Opening Ceremony, the Introduction of Teams is graded in the range from 1 to 10.

### 2. Average Point (*P*)

The Average Point for any performance is calculated in the following manner. Two extreme Grades, one maximum and one minimum, are replaced with one grade equal to their arithmetic mean. In the next step, the Average Point *P* is determined as the arithmetic mean of the new data set of *N*-1 grades. Any Average Point is rounded to 0.01 point.

### 3. Sum of Points (*SP*)

The Sum of Points for the Introduction of Teams at the Opening Ceremony is equal to the Average Point earned. The Sum of Points in a SF is equal to the arithmetic sum of all the Average Points for the Team in all performances in the said SF. Any resulting Sum of Points is rounded to 0.01 point.

### 4. Total Sum of Points (*TSP*)

The value of *TSP* is equal to the sum of all *SPs* for the Team during all completed SFs and the Introduction of the Team. The resulting value is calculated after each SF and rounded to 0.1 point.

### 5. Criterion of Victory (*V*)

For the Team winning in a SF with the Sum of Points equal to  $SP_{max}$ , the Criterion of Victory is set to  $V=1$ . For the Teams which are not winners of the SF but have  $SP \geq SP_{max}-2$ ,  $V=1$ . For the Teams which have  $SP_{max}-10 \leq SP < SP_{max}-2$ ,  $V=0.5$ . For the Teams which have  $SP < SP_{max}-10$ ,  $V=0$ .

### 6. Sum of Victories (*SV*)

The parameter *SV* of a Team equals the arithmetic sum of Criteria *V* in all completed SFs.

### 7. Ranking (*R*)

The Ranking *R* for a Team has values from 1 to *N*, where *N* is total number of Teams in the IYNT. It indicates the position of the Team in the list of all Teams sorted descending. The value of *R* for all *N* Teams is calculated only after the completion of the third Selective SF. The best Ranking ( $R=1$ ) is assigned to the Team that has the highest Sum of Victories (*SV*) at the end of all preceding

rounds. In case of equal *SV* for two or several Teams, their Ranking is determined via comparison of other grading parameters in the following order:

- Total Sum of Points (*TSP*) after all preceding rounds;
- the sum of Average Points for all Reports in all preceding SFs;
- the sum of Average Points for all Oppositions in all preceding SFs;
- the Average Point for one single best Report in the preceding SFs;
- the Average Point for one single best Opposition in the preceding SFs.

If the listed criteria are not sufficient to unambiguously resolve the ranking of the Teams, the GC introduces additional criteria allowing determination of a univocal ranking.

### **III. Penalties**

#### **1. Yellow cards and Summing of the penalties**

Penalties during a SF are applied only to the *SP* earned during the said SF. A yellow card is used to indicate each penalty. A yellow card issued to a Team reduces the *SP* in this SF by 10%; two yellow cards issued to a Team during a SF reduce the *SP* by 20%; three yellow cards reduce the *SP* by 30%, etc. The penalties for various violations are applied independently and sum up.

#### **2. Number of rejected challenges (*NR*)**

If the total number of rejected challenges in all (the current and all preceding) SFs exceeds the limit (three rejections) by one, a yellow card is issued; if it exceeds the limit by two, two yellow cards are issued, etc. If there is no rejected challenge in a particular SF, the *SP* in this SF is not penalized even if the total number of rejections in preceding SFs has exceeded the limit. Repeated rejection (if a challenge on the same problem has been rejected by the Team previously) incurs no penalty.

#### **3. Number of individual performances in one Science Fight (*NP*)**

Any individual Team Member is allowed to take the floor only once during a SF. If the Team Member takes the floor in two roles, one yellow card is issued; if the Team Member takes the floor in three roles, two yellow cards are issued.

#### **4. Number of individual performances in Selective and Semi-Final Science Fights (*NT*)**

Throughout all SFs taken together, except for the Finals, any individual Team Member is allowed being Reporter only once; plus being Opponent only once; plus being Reviewer only once. Each violation results in one yellow card.

#### **5. Duration of one performance (*DP*)**

If the duration of Team performance during their Introduction at the Opening Ceremony exceeds the time limit (3 minutes), each extra minute results in one yellow card. The extra time is rounded up to next minute. There are no penalties

for exceeding the time allowed for presentations at the SFs where time is under control of the Chairperson who must stop the Phase when the time is up.

## **IV. Results**

1. The current values of Grading parameters for the Teams (with penalties applied) are published as a table after each SF:

*SP*, Sum of Points for the most recent completed SF or all preceding SFs;

*TSP*, Total Sum of Points;

*SV*, Sum of Victories;

*R*, Ranking (from the third Selective SF onwards.)

2. The following grading parameters are assigned to the Team that has not taken part in a SF:  $SP=0$ ,  $V=0$ .

## **Chapter 4. Distribution of Teams among Groups**

### **I. Selective Science Fights**

1. For the three first Selective SFs, the distribution of Teams among the Groups and the order of performances are determined by the lot. The lots are drawn at the Opening Ceremony.

2. The scheme for drawing lots is made public prior to the procedure. The procedure aims at such a distribution of Teams among the Groups that the following criteria are respected when possible:

no two Teams meet more than once throughout all Selective SFs,

each Team changes Groups as many times as possible,

the Teams having the highest Ranking *RO* do not meet each other in the Selective SFs.

Below is given an exemplary distribution of 18 Teams, where the numbers indicate the Team index received in the lots. This and similar schemes aim at allowing each Team to be Reporters in all three possible Stages: Stage I, Stage II, and Stage III. The order of Teams in each Group determines the order of performances in the Stage I.

| SF   | Groups |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|      | A      |    |    | B  |    |    | C  |    |    | D  |    |    | E  |    |    | F  |    |    |
| SF 1 | 1      | 7  | 13 | 2  | 8  | 14 | 3  | 9  | 15 | 4  | 10 | 16 | 5  | 11 | 17 | 6  | 12 | 18 |
| SF 2 | 9      | 16 | 6  | 10 | 17 | 1  | 11 | 18 | 2  | 12 | 13 | 3  | 7  | 14 | 4  | 8  | 15 | 5  |
| SF 3 | 18     | 5  | 10 | 13 | 6  | 11 | 14 | 1  | 12 | 15 | 2  | 7  | 16 | 3  | 8  | 17 | 4  | 9  |

3. In the fourth Selective SF, the Teams are distributed among the Groups according to their Ranking  $R$ . Below is given an exemplary distribution of 18 Teams, where the index indicates the Ranking  $R$  of the Teams after the third Selective SF. This and similar schemes aim at separating top Teams from each other, such that they compete in different Groups. From the fourth Selective SF onwards, the order of performances is determined by the Captain's Contest.

| SF   | Groups |   |   |    |   |   |    |   |   |    |    |   |    |    |   |    |    |   |
|------|--------|---|---|----|---|---|----|---|---|----|----|---|----|----|---|----|----|---|
|      | A      |   |   | B  |   |   | C  |   |   | D  |    |   | E  |    |   | F  |    |   |
| SF 4 | 16     | 9 | 4 | 17 | 8 | 5 | 18 | 7 | 6 | 13 | 12 | 1 | 14 | 11 | 2 | 15 | 10 | 3 |

## II. Semi-Final and Final Science Fights

1. If the total number of Teams is over 11, nine Teams having the best Ranking  $R$  after the completion of Selective SF are allowed to the Semi-Finals. The distribution of the Teams among the Groups of Semi-Final SF is then given by the table below, where the least number corresponds to the best Ranking  $R$ . The order of performances is determined by the Captain's Contest.

| Semi-Final Groups |   |   |   |   |   |   |   |   |
|-------------------|---|---|---|---|---|---|---|---|
| A                 |   |   | B |   |   | C |   |   |
| 7                 | 6 | 1 | 8 | 5 | 2 | 9 | 4 | 3 |

2. Only one Team from each of the three Semi-Final Groups is allowed to the Final SF. If there is more than one Team with  $V=1$  in the Group, only the Team with the best Ranking  $R$  is allowed to the Finals.

3. If the total number of Teams is between 8 and 11, then six Teams having the best Ranking  $R$  after the completion of Selective SFs are allowed to the Semi-Finals in two Groups. The distribution of Teams among the Groups is given the table below. Based on their results in the Semi-Final SF, three Teams are allowed to the Finals.

| Semi-Final Groups |   |   |   |   |   |
|-------------------|---|---|---|---|---|
| A                 |   |   | B |   |   |
| 5                 | 4 | 1 | 6 | 3 | 2 |

4. If the total number of Teams is less than eight, the Semi-Finals are not carried out and the three Teams with the best Ranking  $R$  are allowed to the Finals.

5. Within one hour after the announcement of the Finalists, the Finalists select the problems for their reports from the set of the main IYNT problems. Priority in the choice is determined by the Ranking  $R$ . The list of selected problems is made public.

## Chapter 5. Winners

### I. Diplomas and Medals

1. Each Team Member and each Team Leader of the winning Teams receive an own Medal and an own Diploma. Official Diplomas of the IYNT must be signed by at least two Members of the GC.

2. The Team winning in the Final SF is awarded 1st place Diplomas and Gold Medals of the IYNT. In case more than one team in the Final SF has a  $SP$  that differs from the winning  $SP$  by no more than 2 points, such Teams are awarded 1st place Diplomas and Gold Medals but only one Team is declared Absolute Winner of the IYNT.

3. Other Teams participating in the Finals are awarded 2nd place Diplomas and Silver Medals of the IYNT.

4. All other Teams participating in the Semi-Final SFs are awarded 3rd place Diplomas and Bronze Medals of the IYNT. If the Semi-Finals are omitted in a case of less than eight Teams in the competition, 3rd place Diplomas are awarded to two Teams with the best Ranking  $R$  that do not pass to the Finals.

### II. Certificates

All other Team Members and Team Leaders receive certificates of participation for their Teams.

## **Chapter 6. Status of the Regulations**

### **I. Authority, Authorship and Application**

These Regulations supercede and replace any and all prior Regulations of the IYNT released by the GC of the IYNT and other Bodies in the past. By releasing these Regulations, the GC abrogates in particular the Regulations of the IYNT 2014 released in 2014. The Regulations are developed by Evgeny Yunosov. Contributions are made by Ilya Martchenko.

### **II. Effective date**

These Regulations are adopted and take effect on February 25, 2015.

### **III. Future amendments**

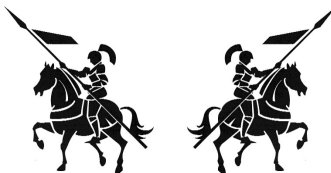
These Regulations are adopted and approved by the GC and can be amended or edited only by the GC. Unless a future GC decision abrogates these Regulations, they remain in force indefinitely.

February 25, 2015

# Partners

**Foundation for Youth  
Tournaments**

*<http://iynt.org/foundation>*



**Regional Center for Talented Youth  
Belgrade II**

*<http://www.centarzatalente.com>*

**Institute of Gifted and Talented  
Children and Youth Belgrade**

*<http://instgcy.com>*



**INSTITUT NTDO**

INSTITUT ZA NADARENU I TALETOVANU DECU I OMLADINU



# *Upload of solutions*

In 2015, we use the upload manager *IYPT Solutions* in cooperation with the IYPT Archive. All teams must obtain login and password and upload their Reports, Oppositions, and Reviews before the Closing Ceremony.



**1. Get an account:** contact the IYNT Situation Center to obtain your team's username and password for *solutions.iypt.org*.

**2. Prepare your files:** there is no limitation imposed to the primary file types and to the number of files constituting one solution, one opposition, or one review. We collect primarily your slides, but we can also collect progress reports, videos, manuscripts, etc. As a rule of thumb we recommend to share both PDFs and the original files such as PowerPoint slides. We acknowledge that animations would be lost while the slides are converted into PDFs. Nevertheless, PDFs are more convenient for users and more resistant towards digital obsolescence and future incompatibility of software. We kindly request that all slides and reports should be duplicated as PDFs, when possible.

**3. Upload:** log in to *solutions.iypt.org*, save the names and contact emails of the authors, choose the necessary files on your local disk, and simply click *upload file*.

# Schedule

## June 19, 2015 — *Friday*

Full day arrival  
14h30–15h30 Lunch  
17h00–20h00 **Opening Ceremony,  
Introduction of Teams, Drawing Lots**  
20h30–23h00 Welcome dinner

## June 21, 2015 — *Sunday*

08h00–09h30 Breakfast  
10h00–10h30 **Briefing for Jury, Teams**  
10h30–13h30 **SF 2 (main problems)**  
14h30–15h30 Lunch  
16h00–19h00 **SF 3 (Invent Yourself)**  
19h30–20h30 Dinner  
21h00–23h00 Disco

## June 23, 2015 — *Tuesday*

Full excursion day  
08h00–09h30 Breakfast  
10h00–13h00 Excursion  
14h30–15h30 Lunch  
16h00–19h00 Excursion  
19h30–20h30 Dinner  
21h00–23h00 Disco

## June 25, 2015 — *Thursday*

08h00–09h30 Breakfast  
09h30–11h30 **Closing ceremony,  
awarding Diplomas and Medals**  
Full day departure

## June 20, 2015 — *Saturday*

08h00–09h30 Breakfast  
09h30–11h00 **Briefing for Jury, Teams**  
11h00–14h00 **SF 1 (main problems)**  
14h30–15h30 Lunch  
15h30–19h00 Talk on M. Milanković  
19h30–20h30 Dinner

## June 22, 2015 — *Monday*

08h00–09h30 Breakfast  
10h00–10h30 **Briefing for Jury, Teams**  
10h30–14h30 **SF 4 (additional  
problems)**  
14h30–15h30 Lunch  
15h30–19h00 Excursion  
19h30–20h30 Dinner  
21h00–23h00 Cultural Evening

## June 24, 2015 — *Wednesday*

08h00–09h30 Breakfast  
10h00–10h30 **Briefing for Jury, Teams**  
10h30–13h30 **Semi-Finals**  
14h30–15h30 Lunch  
16h00–19h30 **Finals**  
19h30–20h30 Dinner  
21h00–23h00 Disco

Subject to minor revisions

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