Ministry of Healthcare of the Russian Federation
Research Institute of Influenza
WHO National Influenza Centre of Russia

EVAg
European Virus Archive goes Global

GA N°653316 – H2020

Participation in “EVAg” (European Virus Archive Global) project under Horison 2020. Success story

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Saint-Petersburg, 07 October 2016

Ministry of Healthcare of Russian Federation

Research Institute of Influenza

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http://www.influenza.spb.ru

Institute was established in 1967 after Asian flu pandemic 1957-1962

National WHO Centre since 1969

Professor Anatoli Smorodintsev,
the organizer and first director of the Institute

Influenza Research Institute was admitted as the WHO-recognized National Influenza Collaborating Centre on 21 March 1969.
Last confirmation of accreditation – 26 May 2011.

Institute is the member of the WHO GISRS (Global Influenza Surveillance and Response System) and of EuroFlu Network

Main areas of expertise and actual topics of research of the Institute

- Refinement of influenza surveillance in Russia according to the WHO international recommendations
- Technologies of the design and production of anti-influenza vaccines of new generation
- Studies of the structure and function of natural and synthetic compounds. Design of antiviral preparations with the different mechanisms of action
- Fundamentals of molecular genetic of viruses and pathogenesis of influenza infection
- Strategy of treatment of acute and chronic viral infections

Russian Federation:2 National Influenza Centres (NIC) and 59 Regional Base Laboratories

2 NICs share 59 Regional Base Laboratories: 49 for RII, 10 – for IIV

The Museum Collection of influenza and other respiratory viruses was organized and maintained within the laboratory of evolutionary variability of influenza viruses

Tel. +7 812 499-1522, Head of the lab. – Mikhail Eropkin, PhD, D.Sci,
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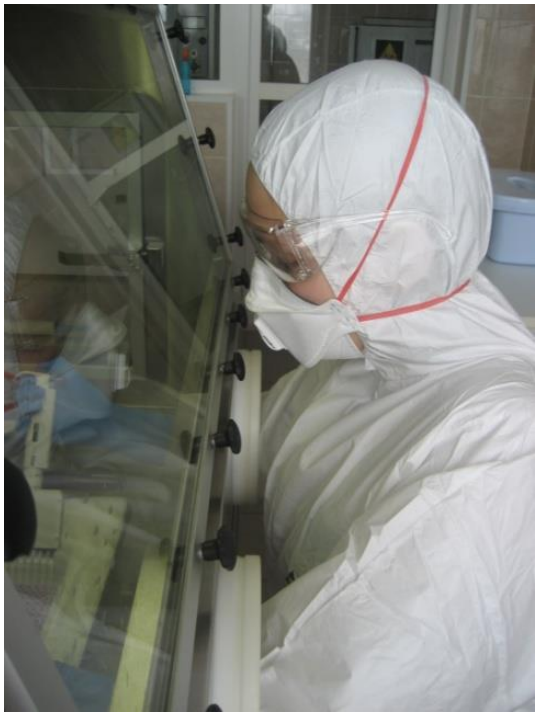


Museum collection of viruses in the Research Institute of Influenza

-Created in 1975 on the basis of the collection of laboratory of virology of Research Institute of Experimental Medicine

- Currently counts more than 7000 different strains of influenza viruses of various types and subtypes
- Each year 100-300 new strains are freeze-dryed and deposited into collection

• **Influenza A viruses (1930-2016)**

H5N1 H2N2
H5N2 H3N8
H5N3 H6N1
H7N3 H16N3
H9N2
H9N7

Hsw1N1
H1N1pdm09
H3N2

H1N1
H1N1 pdm09
H1N2
H2N2 H7N9
H3N2 H9N2
H3N2v

H7N1
H7N2
H1N2

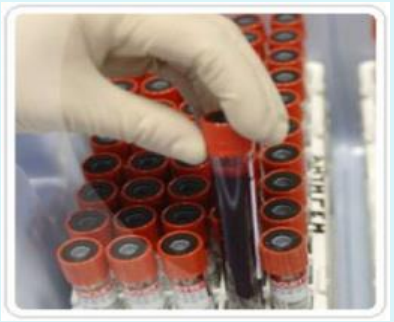
• **Influenza B viruses(1940-2016)**

B Victoria-lineage (1940-2016)
B yamagata-lineage (1988-2016)

• **Influenza C viruses(1983-1989)**

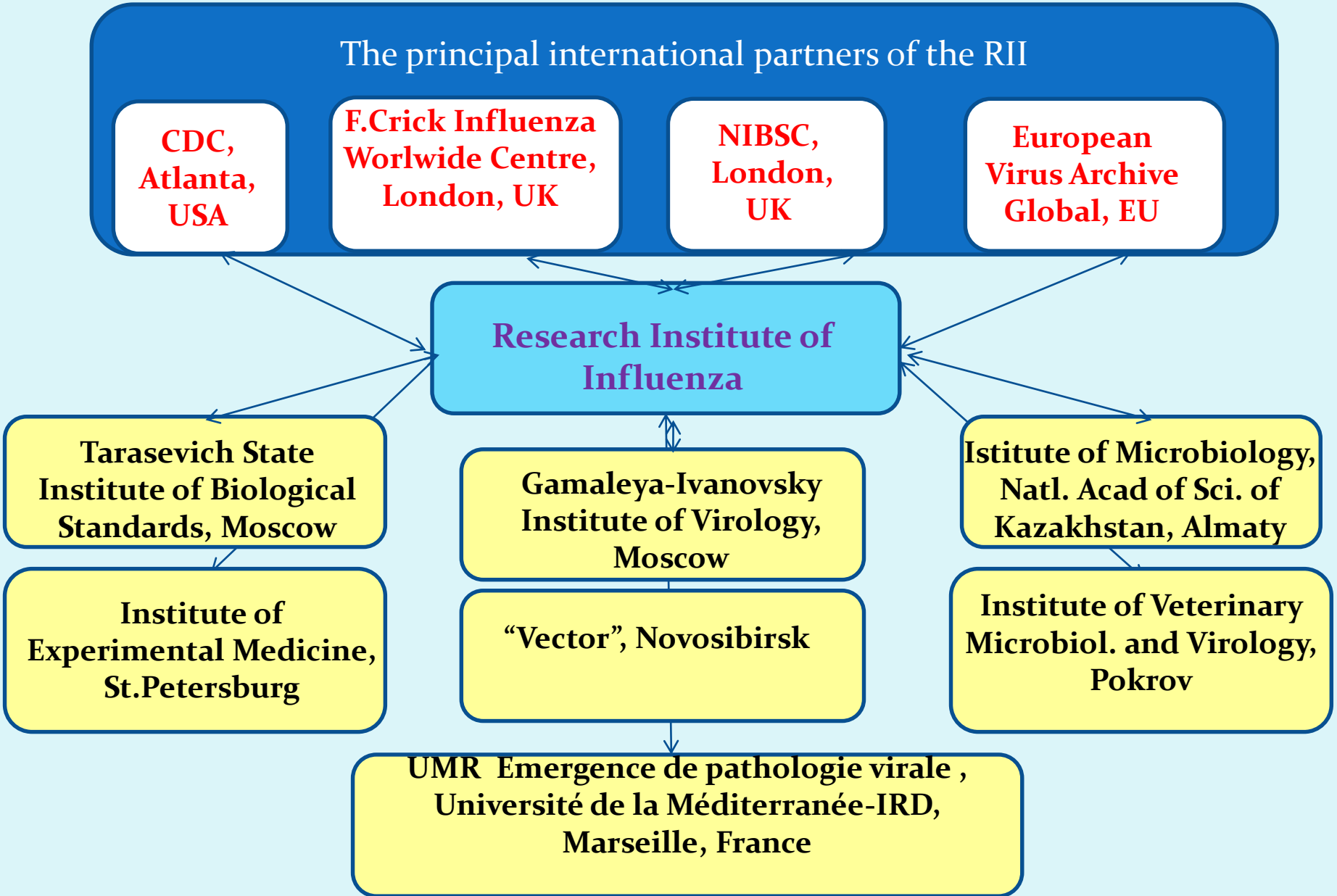
Collection of respiratory viruses

- A specialized collection which was included in the list of virus collections defined by Goskomnadzor of RF in 1995 ;
- Etalon strains were purchased from many foreign countries (The USA, UK, Czekoslovakia et.c.);
- The collection was founded in 1977;
- **Collection includes:**
- Etalon strains of the main groups of viruses which provoke acute respiratory syndromes:
  - adenoviruses,
  - rinoviruses,
  - Parainfluenza viruses of the type I, II, III, IV,
  - coronaviruses,
  - RS-viruses,
  - Herpesviruses

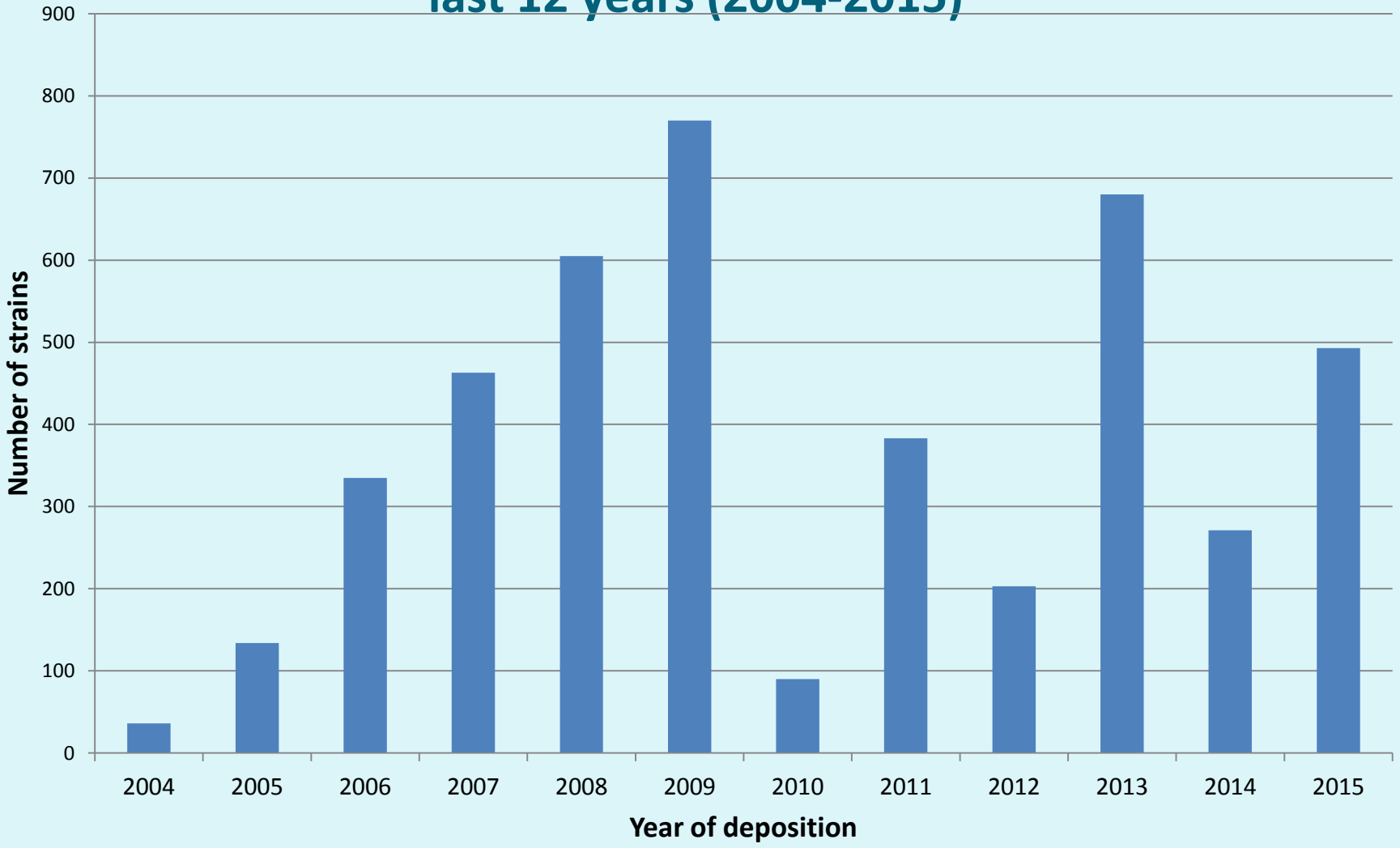


- Author owned strains deposited in the State Collection of Viruses;
- **> 4000 units of storage**;

Collaboration between Research Institute of Influenza and other Research Institutions in Russia and abroad for exchange of influenza viruses



Number of influenza strains deposited in the RII collection in the last 12 years (2004-2015)



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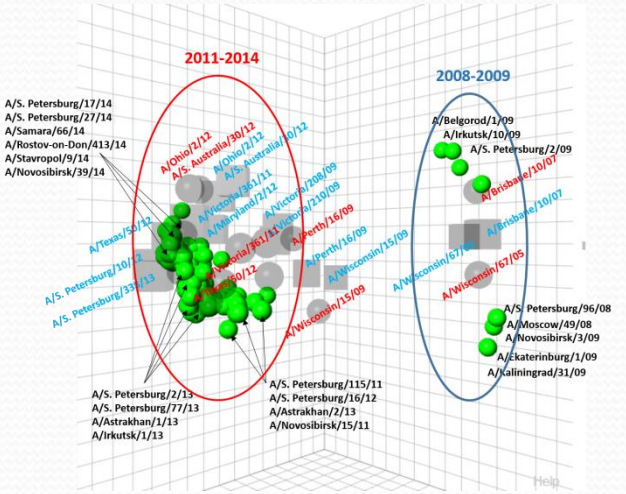

3D-antigenic map of influenza A(H3N2) strains isolated in 2008-2014

Collection of influenza and other respiratory viruses of the RII is a member of EVAg (European Virus Archive goes Global)

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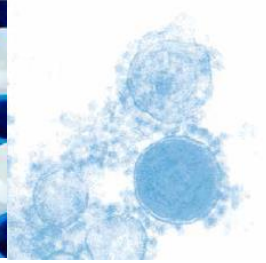
- 2010-2015 RII was the associated member of EVA project (FP7)
- 2015-2019 – full partner of the EVAg. The project was supported by the EU H2020 grant No. 653316


EVAg

European Virus Archive goes Global (2015-2019)

Prof. Jean-Louis ROMETTE

Project Coordinator

Emergence des pathologies virales (EPV) - UMR 190 Aix-Marseille Université-IRD

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http://global.european-virus-archive.com/

By courtesy of Prof. J.-L. Romette

EVAg consortium foundation

The overall objective of EVAg is to create and mobilise an International network of high calibre centres around a strong European group of institutes selected for their appropriate expertises, to collect, amplify, characterise, standardise, authenticate, distribute and track, human, mammalian and other exotic viruses

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EVAg consortium foundation

Non for profit organization

- **Each partner:**
  - retains the ownership of it's biological resource (CA);
  - is free to decide which part of it's collection will be shared with the Scientific community via the Web-based catalogue (CA).
- **EVAg management** has been mandated to represent the partners for all actions aiming at:
  - Developing networks with new associated partners;
  - Promoting EVAg consortium activities and results;
  - Giving access to EVAg biological resources.
- **All partners** have signed the GA and a CA defining rights and obligations.

By courtesy of Prof. J.-L. Romette

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EVAg consortium foundation

A well established organization

- 6 years of existence as a consortium
- An operational website (200 visits per day)
- A web-based catalogue including more than 1800 gold standard products (virus and derived materials) and more to come in the future
- More than 2000 products distributed worldwide
- Active actor, under the WHO umbrella, during the last virus outbreaks: MERS-CoV, Ebola

Today among the largest virtual virus collection worldwide

By courtesy of Prof. J.-L. Romette

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A new Website: communication & distribution

http://global.european-virus-archive.com

EVAg is a non profit organisation that mobilises a global network with expertise in virology to **standardise** viruses and derived products.

A unique biological resource in the field of virology, readily available online. Users may benefit from special funding to access to products of interest, do not hesitate to apply.

Start browsing through our viruses and related products

A network of laboratories
An international group of 25 laboratories, including 16 EU member state institutions and 9 non-EU institutions, that represent an extensive range of virological disciplines.

Quality
We highly take into consideration the quality of the viruses and derived products added to our catalogue. Improvements on quality process will be addressed during the project.

Research
Focused on the creation of new tools, techniques and concepts to develop the infrastructure and to provide easier and less expensive access to virological materials.

Collaborations
An open entity aiming at developing synergies and complementary capabilities in such a way as to offer an improved access to researchers.

Preparedness and Response
EVAg generates and distributes globally diagnostic materials and protocols in the event of epidemiological emergencies.

Online Catalogue
A user-friendly web Portal with a continuously increasing number of viruses and derived products. Start here...

By courtesy of Prof. J.-L. Romette

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The Consortium : 45 members

- **18 EU-partners**
- **10 non EU-partners**
- **17 Associated partners**

including

- **14 Institutes with BSL4 facilities**
- **5 Veterinarian Institutes**

All those members share the same QMS to deliver high quality products through a unique entry point: the EVAg web-based catalogue

By courtesy of Prof. J.-L. Romette

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The Consortium: 9 non-EU partners

- **Agricultural Research Council (ARC-OVI)**, (Dr Claude Sabeta), Pretoria, **South Africa**.
- **National Health Laboratory Services (NICD-NHLS),** (Prof Janusz Paweska), Johannesburg, **South Africa.**
- **Chumakov Institute of Poliomyelitis and Viral Encephalitides (IPVE)**, (Dr Alexander Lukashev), Moscow, **Russia**.
- **Scientific research institute of influenza (RII)**, (Prof Mikhail Eropkin),St Petersburg, **Russia**.
- **Research Institute of Vaccines and Sera II Mechnikov (Mechnikov RIVS),** (Prof Vitaly Zverev), Moscow, **Russia**.
- **Commonwealth Scientific and Industrial Research Organisation (CSIRO),** (Prof Kurt Zuelke) Geelong, **Australia**.
- **National Institute of Infectious Diseases (NIID)**,(Dr. Masayuki Saijo) Tokyo, **Japan**.
- **National Institute for viral disease control and prevention of the China CDC**, (Prof George Fu Gao), Beijing, **China**.
- **Wuhan Institute of Virology, Chinese Academy of Sciences (WIV),** (Prof Zhi-Hong Hu), CAS, Wuhan, **China**.

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The Consortium: 9 associated partners

- **University of Texas Medical Branch (UTMB),** US-CDC, (Prof Scott Weaver), Galveston, Texas, **USA**.
- **Institute of Virology** ,(Prof Stephan Becker), Marburg, **Germany**.
- **St Petersburg Pasteur Institute**, St Petersburg, **Russia**.
- **Center for Molecular Diagnostics and Therapy (CRIE),** (Dr German Shipulin), Moscow, **Russia**.
- **Hellenic Pasteur Institute (HPI),** (Dr.Urania Georgopoulou), Athens, **Greece**.
- **Hacettepe University (HU)**, (Prof Koray Ergunay) Ankara, **Turkey**.
- **Jordan University of Science and Technology**, (Prof. Dr. Nabil Hailat), Amman, **Jordan**.
- **Centro Nacional de Microbiologia, Instituto de Salud Carlos III**, (Prof. Jose Manuel Echevarria), Madrid, **Spain**.
- **Korea National Institute of Health,** (Dr Youngmee Jee), Seoul, **Korea**

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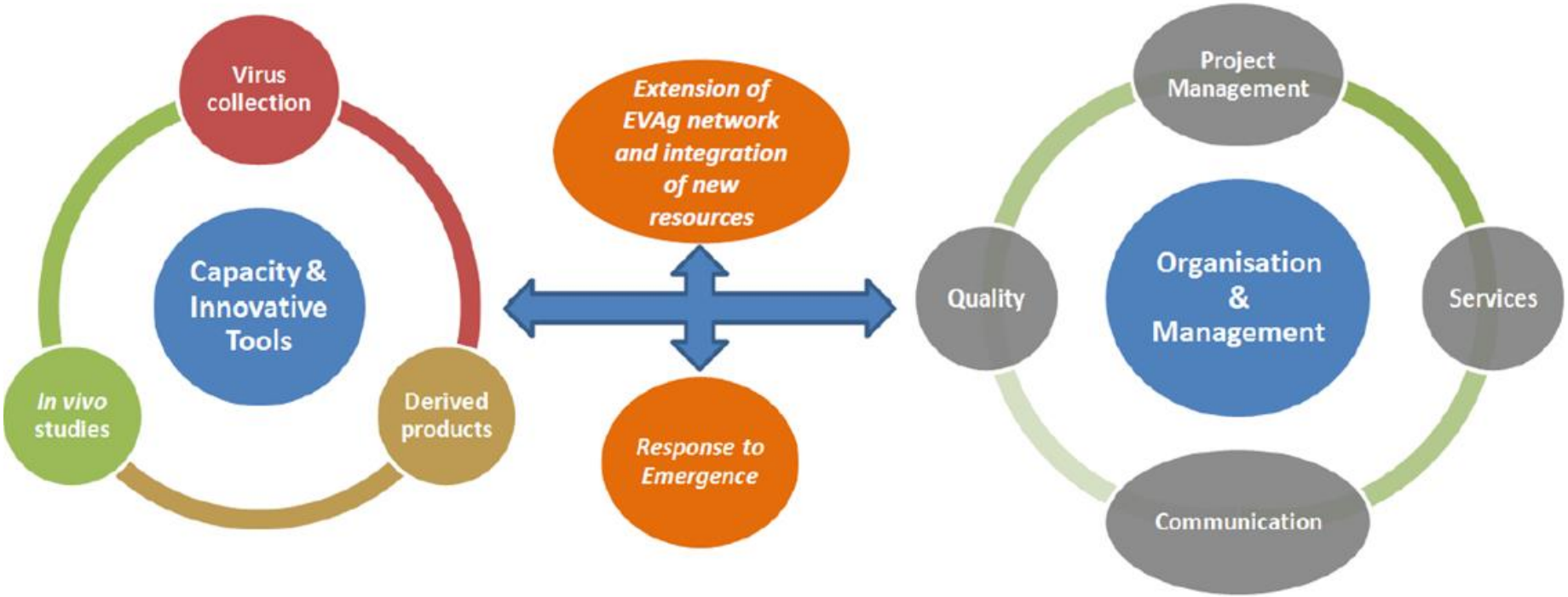
Consortium Architecture



By courtesy of Prof. J.-L. Romette

Management of viral outbreaks

- **MERS-CoV outbreak (2012)**
- **EBOLA virus outbreak (2015)**
- **ZIKA virus outbreak (2016)**

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Advantages of the participation of Russian Insitutions in the EVAg

- International recognition of the collections
- Publicity and acceleration of the exchange of knowledge, products, techniques
- Growth of quality of products, standardization and harmonization of the techniques and reagents under international control of quality
- Better accessibility of the most important virus collections
- Better preparedness to response on possible emerging pathogens, both human and animal

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Difficulties of the participation of Russian Insitutions in the EVAg

- Russian partners cannot be funded directly by the EU grants. The only exclusion is TNA (trans-national access to viruses, products, research facilities)
- Russian institutes are subjected to difficulties in TNA, especially in life virus exchange
- For the moment no one of Russian partners was able to find the parallel funding of their participation in the EVAg from Russian internal sources

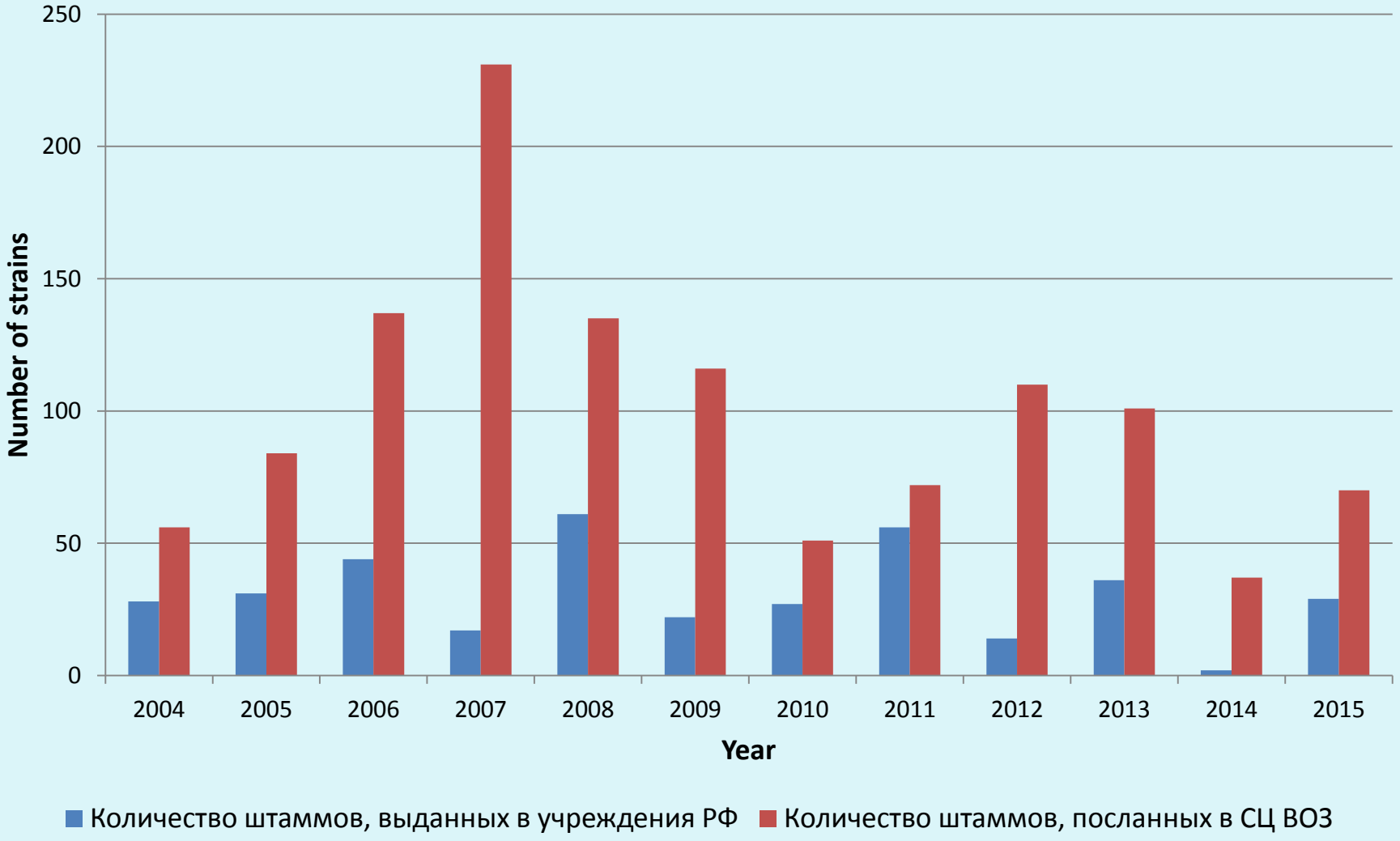
However we are optimistic and believe that gradually many of the difficulties might be overcome

Thank you for the attention

http://www.influenza.spb.ru

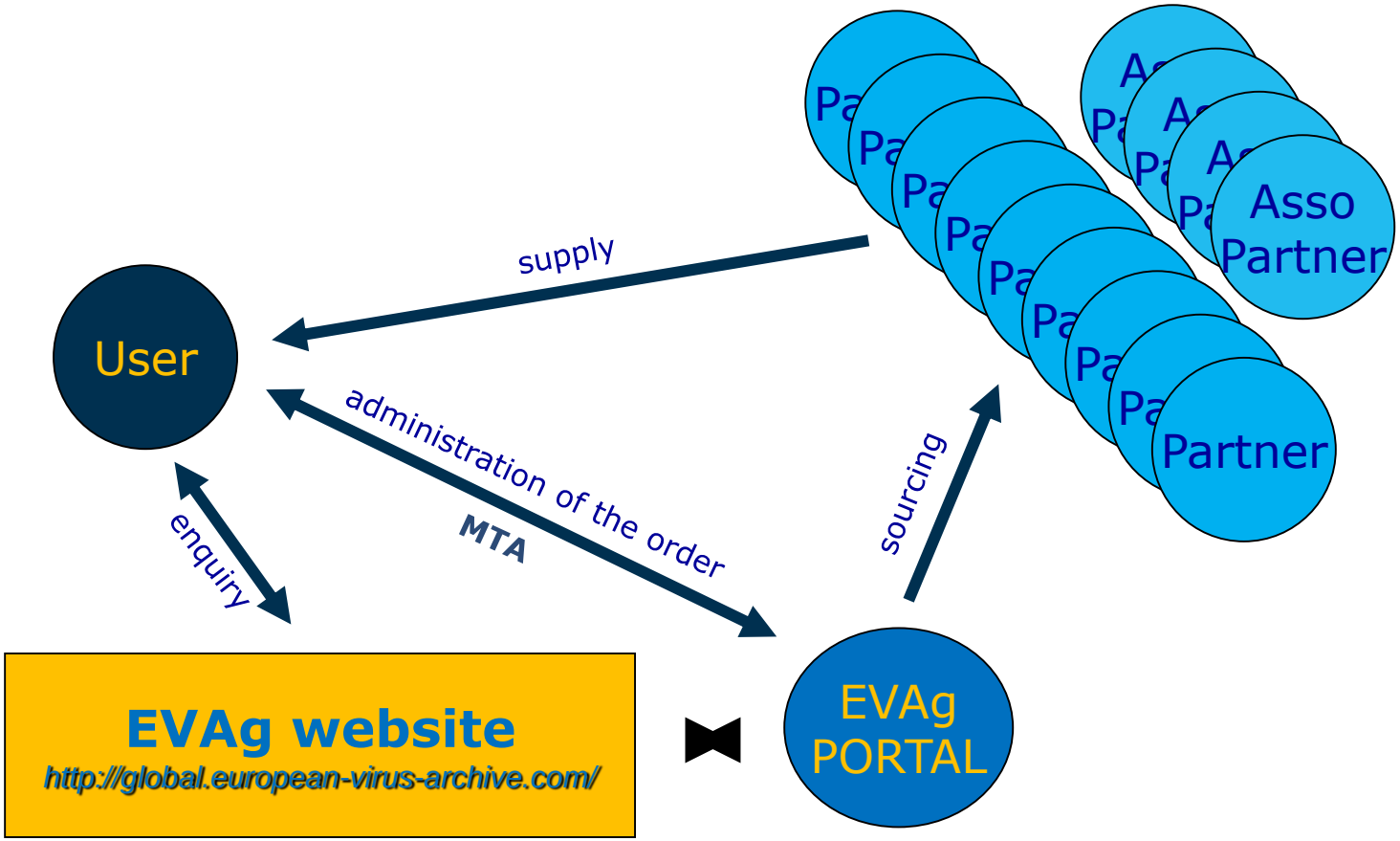
http://global.european-virus-archive.com

Number of influenza strains from the RII collection delivered to the other institutions of Russia and to International Collaborating Influenza Centres during the past 12 years



В соответствии с Постановлением Правительства Российской Федерации от 28 апреля 2015 года № 418 "О федеральной целевой программе "Национальная система химической и биологической безопасности Российской Федерации (2015 - 2020 годы)" НИИ гриппа существенно расширяет и модернизирует свои коллекции вирусов. Для этого будет произведена реконструкция одного из корпусов. Новое помещение будет возведено в соответствии с GLP для работы по II-IV группам патогенности. Коллекции будут размещены в автоматических станциях хранения на -20° С (лиофилизированные штаммы) и -80°С – антисыворотки, вирусные суспензии для среднесрочного хранения (до 1 года).

Providing Access to the EVAg Resource



Simple and efficient procedure to reduce delivery time

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