



The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

# The German Non-Profit Society RECHENKRAFT.NET E.V.

History — Achievements — Projects — Future Plans

*by Torbjörn Klatt, Second Chairman*  
Hannover, 2011-08-17



2011-08-15

The Society Rechenkraft.net e.V. (RKN)

The German Non-Profit Society  
RECHENKRAFT.NET E.V.

History — Achievements — Projects — Future Plans

by Torbjörn Klatt, Second Chairman  
Hannover, 2011-08-17



Welcome to this talk about the German non-profit society  
Rechenkraft.net e.V. and its community Rechenkraft.net — short RKN.

The purpose of the society RKN is to spread information about  
applications of distributed grids in scientific research.

Therefore, the society RKN offers help for bringing ordinary people with  
desktop computers and scientists with computational applications  
together.

Today I will describe the history of RKN and its society, present its  
message board and wiki and introduce our two own DC projects and one  
of our supported DC projects.



# An Idea Has Been Born

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

April 2001 Michael " *Bananeweizen* " Keppler as initial founder of the team RKN started building up the early versions of the project database

The Society Rechenkraft.net e.V. (RKN)

History

Pre 2004

An Idea Has Been Born

2011-08-15

An Idea Has Been Born

April 2001 Michael " *Bananeweizen* " Keppler as initial founder of the team RKN started building up the early versions of the project database

In early 2001 a man, who called himself *Bananeweizen* and who was the founder of the German team Rechenkraft at FOLDING@HOME and other DC projects, set up a website with information about different DC projects.



# An Idea Has Been Born

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

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The Society Rechenkraft.net e.V. (RKN)

History

Pre 2004

An Idea Has Been Born

2011-08-15

An Idea Has Been Born

April 2001 Michael " *Bananeweizen*" Keppler as initial founder of the team RKN started building up the early versions of the project database

June 2001 RECHENKRAFT.NET message board was set up

Few months later and for a better communication among the other team members he set up the first version of RKN's today's message board.



# An Idea Has Been Born

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

- April 2001 Michael " *Bananeweizen*" Keppler as initial founder of the team RKN started building up the early versions of the project database
- June 2001 RECHENKRAFT.NET message board was set up next 3 years various discussions and team challenges mainly crunching for FOLDING@HOME and SETI@HOME, but new projects got attention as well

*full time line can be found in our Wiki under Association*

The Society Rechenkraft.net e.V. (RKN)

History

Pre 2004

An Idea Has Been Born

2011-08-15

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Full time line can be found in our Wiki under Association

This message board was used for various lively discussions about team challenges and every day as well as special problems with the few DC projects, which were around.

The team RKN was mainly participating at FOLDING@HOME and SETI, though other projects got attention as well.

The full time line of the milestones of the team and society RKN can be found in our wiki.



# A Start Has Been Made

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

Aug. 2004 first foundation meeting

History

Pre 2004

**The First 6 years**

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

A Start Has Been Made

2011-08-15

A Start Has Been Made

Aug. 2004 first foundation meeting

During the year 2004, the scientist and community member Michael Weber got the idea of converting the community RKN into a registered society.

And in August the first of three foundation meetings was organised on IRC.



# A Start Has Been Made

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

Aug. 2004 first foundation meeting

May 2005 the WIKI was set up

History

Pre 2004

**The First 6 years**

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

A Start Has Been Made

2011-08-15

A Start Has Been Made

Aug. 2004 first foundation meeting  
May 2005 the WIKI was set up

In May 2005, the wiki as it exists now, was set up and the previous project database by *Bananeweizen* was integrated and expanded in there.



# A Start Has Been Made

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

Aug. 2004 first foundation meeting

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district court of Marburg

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

A Start Has Been Made

2011-08-15

A Start Has Been Made

Aug. 2004 first foundation meeting  
May 2005 the WIKI was set up  
June 2005 RECHENKRAFT.NET E.V. got registered at  
district court of Marburg

Finally, almost one year after the first foundation meeting the society RKN got officially registered by Michael Weber in Marburg.

From now on, RKN is entitled to carry the suffix "'e.V.'", which is short for registered society in Germany.



# A Start Has Been Made

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

Aug. 2004 first foundation meeting

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*foundation, registration and application for being non-profit done by Michael H.W. Weber*

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

A Start Has Been Made

2011-08-15

A Start Has Been Made

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July 2005 RKN E.V. became officially non-profit

foundation, registration and application for being non-profit done by Michael H.W. Weber

Just one month later, in July 2005, the society RKN became officially recognised as non-profit and thus donations can be offset against German tax.





# A Start Has Been Made

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

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- July 2007 first RKN SEAL OF APPROVAL awarded to WCG

*foundation, registration and application for being non-profit done by Michael H.W. Weber*

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

A Start Has Been Made

2011-08-15

A Start Has Been Made

Aug. 2004 first foundation meeting  
May 2005 the WIKI was set up  
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foundation, registration and application for being non-profit done by Michael H.W. Weber

In the following years, more and more people became registered members and in July 2007 the first RKN SEAL OF APPROVAL was awarded to WCG

The RKN SEAL OF APPROVAL is an award categorising the goodness of DC projects along four scales:

- Reliability of the clients, servers and WUs
- Communication policy of the project maintainers
- Instructions' and scientific objectives' both comprehensibility and internationality
- Benefit for the general public as scientific and non-scientific publications and open access result database



# A Start Has Been Made

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

Aug. 2004 first foundation meeting

May 2005 the WIKI was set up

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district court of Marburg

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Sep. 2007 official partner of WCG

*foundation, registration and application for being non-profit done by Michael H.W. Weber*

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

A Start Has Been Made

2011-08-15

A Start Has Been Made

Aug. 2004 first foundation meeting  
May 2005 the WIKI was set up  
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WCG  
Sep. 2007 official partner of WCG

foundation, registration and application for being non-profit done by Michael H.W. Weber

Finally, a couple of month later, RKN became an official partner of the  
WORLD COMMUNITY GRID



# Acquiring Donations

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

**The First 6 years**

The Last Year

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

March 2008 German courts can assign penalties to be paid to RKN E.V.

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

Acquiring Donations

2011-08-15

Acquiring Donations

March 2008 German courts can assign penalties to be paid to RKN e.V.

The society RKN continuously tries to collect donations and since March 2008 German courts can assign penalties to be paid to the society RKN.

Unfortunately, there have not been any cases yet.



# Acquiring Donations

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

**The First 6 years**

The Last Year

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

March 2008 German courts can assign penalties to be paid to RKN E.V.

`www.suchkraft.de` as a Google-powered search engine is online

*(Google's advertising revenue is donated to RKN E.V.)*

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

Acquiring Donations

2011-08-15

Acquiring Donations

March 2008 German courts can assign penalties to be paid to RKN E.V.  
`www.suchkraft.de` as a Google-powered search engine is online  
(Google's advertising revenue is donated to RKN E.V.)

As well in March 2008, `www.suchkraft.de` is online, which is a Google-powered search engine, where the advertising revenue through GoogleAds is donated to RKN.



# Acquiring Donations

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

The Last Year

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

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`www.suchkraft.de` as a Google-powered search engine is online

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Nov. 2008 petition addressed to German parliament to enable DC on non-security related public computers

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

Acquiring Donations

2011-08-15

Acquiring Donations

March 2008 German courts can assign penalties to be paid to RKN E.V.  
`www.suchkraft.de` as a Google-powered search engine is online  
*(Google's advertising revenue is donated to RKN E.V.)*  
Nov. 2008 petition addressed to German parliament to enable DC on non-security related public computers

In November 2008 RKN initiated a petition addressed to the German parliament to connect non-security related public computers as in libraries to the BOINC network.

Though we could convince a couple of thousand German citizens to sign this petition, it did not come to a debate in the German parliament.



# Acquiring Donations

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

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Apr. 2009 initiation of RKN SEISMIC ARRAY

*(supporting QCN)*

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

Acquiring Donations

2011-08-15

Acquiring Donations

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Apr. 2009 initiation of RKN SEISMIC ARRAY  
(supporting QCN)

Since April 2009 RKN is actively supporting the **QUAKE CATCHER NETWORK** project and is running the **RKN SEISMIC ARRAY**.

We organise collective orders of the hardware for the sensors and one of our members is busy compiling the parts into functional sensors.



# Acquiring Donations

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

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June 2009 Uwe "yoyo" Beckert got interviewed by German public TV station ZDF about YOYO@HOME

The Society Rechenkraft.net e.V. (RKN)

History

The First 6 years

Acquiring Donations

2011-08-15

Acquiring Donations

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In the summer of 2009, Uwe Beckert named "'yoyo"' got interviewed by the German public TV station ZDF about his — and our — BOINC project YOYO@HOME.

A recording of this TV program can be found in the time line in our wiki.



# Combining Efforts

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

**The Last Year**

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

June 2010 RKN E.V. presents its own project RNA  
WORLD on the RNA 2010 conference in  
Seattle/USA

The Society Rechenkraft.net e.V. (RKN)

History

The Last Year

Combining Efforts

2011-08-15

Combining Efforts

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WORLD on the RNA 2010 conference in  
Seattle/USA

In early 2010, RKN launched its own scientific project RNA WORLD — I will come to more details about it later on — initiated and run by Michael Weber, PhD and in June he presented it on the RNA 2010 conference in Seattle.





# Combining Efforts

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

**The Last Year**

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

June 2010 RKN E.V. presents its own project RNA  
WORLD on the RNA 2010 conference in  
Seattle/USA

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The Society Rechenkraft.net e.V. (RKN)

History

The Last Year

Combining Efforts

2011-08-15

Combining Efforts

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Another TV interview was given by Frank Strohdiek about DC, BOINC  
and especially CPDN in a German weather program.



# Combining Efforts

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

The Last Year

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

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The Society Rechenkraft.net e.V. (RKN)

History

The Last Year

Combining Efforts

2011-08-15

Combining Efforts

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As well in September 2010, our project RNA WORLD was again presented at the MIT in Cambridge and in Dresden.



# Combining Efforts

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

**The Last Year**

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

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The Society Rechenkraft.net e.V. (RKN)

History

The Last Year

Combining Efforts

2011-08-15

Combining Efforts

June 2010 RKN e.V. presents its own project RNA WORLD on the RNA 2010 conference in Seattle/USA

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Feb. 2011 RKN e.V. became an official member of the IDGF

After getting in touch with Ad Emmen during last year's BOINC workshop, we finally became an official member of the IDGF in February.



# Combining Efforts

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History

Pre 2004

The First 6 years

The Last Year

Current Activities

The Forum

The Wiki

Own Projects

Supported Projects

Yoyo@Home

RNA World

Closing

June 2010 RKN E.V. presents its own project RNA WORLD on the RNA 2010 conference in Seattle/USA

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**Registered Members: 71** (as of 2011-08-01)

The Society Rechenkraft.net e.V. (RKN)

History

The Last Year

Combining Efforts

2011-08-15

Combining Efforts

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Today RKN counts 71 registered members of which one is an honoured member ...



# Combining Efforts

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

**The Last Year**

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

June 2010 RKN E.V. presents its own project RNA WORLD on the RNA 2010 conference in Seattle/USA

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**Annual Budget:** approx. € 2,900

The Society Rechenkraft.net e.V. (RKN)

History

The Last Year

Combining Efforts

2011-08-15

Combining Efforts

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Registered Members: 71 (as of 2011-08-01)  
Annual Budget: approx. € 2,900

and we have an annual budget of nearly € 3,000.



# An Open and Pleasant Community

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

History  
Pre 2004  
The First 6 years  
The Last Year

Current Activities  
**The Forum**  
The Wiki

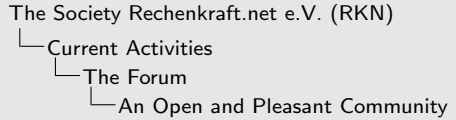
Own Projects  
Supported Projects  
Yoyo@Home  
RNA World

Closing

- lively message board with almost 2,000 members
- discussions about every project

<http://forum.rechenkraft.net/>

2011-08-15



An Open and Pleasant Community

- lively message board with almost 2,000 members
- discussions about every project

<http://forum.rechenkraft.net/>

Having given an outline of the history of the community and society RKN, I will come to the communication platform of both community and society now.

There are almost 2,000 people registered at RKN's message board and ...

... though just a few them participate on a daily basis the message board is very active ...

and keep on discussing about almost every DC project — BOINC or non-BOINC.



# An Open and Pleasant Community

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

The Last Year

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

- lively message board with almost 2,000 members
- discussions about every project
- often better and faster project specific support by other volunteers than in the project's message boards

<http://forum.rechenkraft.net/>

The Society Rechenkraft.net e.V. (RKN)

Current Activities

The Forum

An Open and Pleasant Community

2011-08-15

An Open and Pleasant Community

- lively message board with almost 2,000 members
- discussions about every project
- often better and faster project specific support by other volunteers than in the project's message boards

<http://forum.rechenkraft.net/>

The big advantage of RKN's message board is its fast and high quality support concerning almost every DC project.

Especially for the German DC community it is valuable not only by RKN team members.



# An Open and Pleasant Community

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

- Pre 2004
- The First 6 years
- The Last Year

## Current Activities

- The Forum
- The Wiki

## Own Projects

- Supported Projects
- Yoyo@Home
- RNA World

## Closing

- lively message board with almost 2,000 members
- discussions about every project
- often better and faster project specific support by other volunteers than in the project's message boards
- mainly German but English subboard available

<http://forum.rechenkraft.net/>

2011-08-15

The Society Rechenkraft.net e.V. (RKN)

└─ Current Activities

└─ The Forum

└─ An Open and Pleasant Community

An Open and Pleasant Community

- lively message board with almost 2,000 members
- discussions about every project
- often better and faster project specific support by other volunteers than in the project's message boards
- mainly German but English subboard available

<http://forum.rechenkraft.net/>

Though the vast majority of the message board is German, a English sub board is available.





# A Steadily Growing Knowledgebase

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

The Last Year

## Current Activities

The Forum

**The Wiki**

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

- Wikimedia based (everybody can contribute)
- detailed description of (almost) every DC project

<http://www.rechenkraft.net/>

2011-08-15

The Society Rechenkraft.net e.V. (RKN)

Current Activities

The Wiki

A Steadily Growing Knowledgebase

A Steadily Growing Knowledgebase

- Wikimedia based (everybody can contribute)
- detailed description of (almost) every DC project

<http://www.rechenkraft.net/>

Our wiki is based on the Wikimedia software and holds ...

... detailed descriptions of almost every DC project and an almost complete list of current, past, active and inactive DC projects — BOINC, non-BOINC — and as well Distributed Thinking projects as the ZOONIVERSE projects.



# A Steadily Growing Knowledgebase

The Society  
Rechenkraft.net  
e.V. (RKN)

Torbjörn Klatt

## History

Pre 2004

The First 6 years

The Last Year

## Current Activities

The Forum

The Wiki

## Own Projects

Supported Projects

Yoyo@Home

RNA World

## Closing

- Wikimedia based (everybody can contribute)
- detailed description of (almost) every DC project
- multi-language

(most pages are already translated into English and Brazilian Portuguese)

<http://www.rechenkraft.net/>

The Society Rechenkraft.net e.V. (RKN)

Current Activities

The Wiki

A Steadily Growing Knowledgebase

2011-08-15

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<http://www.rechenkraft.net/>

In the last years and months a group of our members made great efforts into translating the whole wiki into different languages.

Up to now, most of the pages are available in English and Brazilian Portuguese.



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- Wikimedia based (everybody can contribute)
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(most pages are already translated into English and Brazilian Portuguese)
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In addition, our wiki holds an electronic library with publications by or related to DC projects.

It does not claim to be complete, but it's a wiki so everybody is welcome to expand it — especially project maintainers.

I guess, I do not have to point out, that this holds for the whole wiki.



# Supporting Rocket Science

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## Constellation@Home

- platform for aerospace simulations
- different applications
- productive since April 2011
- further supporters are DGLR and SELFNET E.V.

<http://www.aerospaceresearch.net/>

2011-08-15

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Own Projects

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Supporting Rocket Science

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Constellation@Home

- platform for aerospace simulations
- different applications
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<http://www.aerospaceresearch.net/>

Before introducing our own two DC projects, I want to say some words about one DC project, which is supported and partially funded by RKN: Constellation@Home.

Constellation is maintained by one of our members Andreas Hornig and his colleagues at the German Aerospace Association — DGLR — in Stuttgart.

Constellation is a platform for different applications in the field of aerospace research ...

... and is in a productive phase since April this year.

Beside RKN the DGLR and the society SELFNET E.V. provide further funding and support.



# Enabling Others

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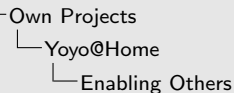


- started as an experiment on Yoyo's (Uwe Beckert) private laptop in 2006
- wrapping DISTRIBUTED.NET client (OGR project)
- officially launched in summer 2007

<http://www.rechenkraft.net/yoyo/>

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Enabling Others



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<http://www.rechenkraft.net/yoyo/>

I guess, most of you, who are familiar with BOINC and different BOINC projects, have already heard about YOYO@HOME.

YOYO@HOME started as an experiment on Uwe Beckert's private laptop back in 2006 and was wrapping DISTRIBUTED.NET's client for the OGR project.



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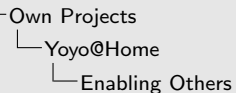


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A few month later, the project became public and was finally migrated onto RKN's own server.

Over time, further projects got wrapped by Yoyo and thus became available in the BOINC network, which gave the initial non-BOINC projects a significant boost.

Enabling Others



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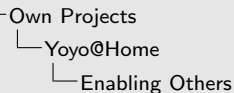


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Just recently the first sub-project, **EULERNET**, finished and all results were published open accessible on [arxiv.org](http://arxiv.org).

Today, the computers connected to **YOYO@HOME** provide about 9.2 Tera FLOPS computational peak power.

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# Getting a Grip on ncRNAs

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- initialised and run by Michael H.W. Weber, PhD
- scanning the fully sequenced genomes of various organisms to annotate and map ncRNAs
- utilise algorithms provided by the *INFERNAL* toolkit

<http://www.rnaworld.de/>

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- Own Projects
  - RNA World
    - Getting a Grip on ncRNAs

Getting a Grip on ncRNAs



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RKN's big baby is RNA WORLD, a DC infrastructure dedicated to RNA research either for identifying newly discovered RNAs or for designing synthetic RNAs.

The idea for this project comes from Michael Weber, who as well is the head of the project.

The current applications run through RNA WORLD are part of the *Infernal* toolkit designed for linux-based HPCs for identifying homologs of RNA, which have therapeutic applications for HIV or Hepatitis C.





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RNA WORLD now routinely identifies ncRNAs with high confidence and self-written add-ons onto the *Infernal* toolkit help in analysing these results.

Through the collaboration with Srinath Thiruneelakantan in India, RNA WORLD is even able to examine virulent strains of *Mycobacterium tuberculosis* in vitro.



# Getting a Grip on ncRNAs

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Today there are 9 people working during their spare-time for RNA WORLD of whom at least some would be happy making the project their main profession.

Though RNA WORLD has a promising future in both, basic biological research and medical application, the project is lacking funding for 3 people over 3 years plus equipment for the necessary wet-lab experiments to finally push the project forward.

Today, the computers connected to RNA WORLD provide about 27 Tera FLOPS of computational peak power.



# Thank You

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Closing

## Thank You For Your Attention

### Any Questions?

Torbjörn Klatt - torbjoern@torbjoern-klatt.de

<http://www.rechenkraft.net>  
<http://www.rechenkraft.net/yoyo/>

<http://forum.rechenkraft.net>  
<http://www.rnaworld.de>



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Closing

Thank You

Thank You

Thank You For Your Attention  
Any Questions?

Torbjörn Klatt - torbjoern@torbjoern-klatt.de

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So, thank you for your attention.

Do you have got any questions regarding Rechenkraft.net or its projects?

If you come up with anything in the future, feel free dropping me or anybody else of RKN an email or visit our message board.