



Science and  
Technology  
Facilities Council

# Welcome

Image © STFC Alan Ford



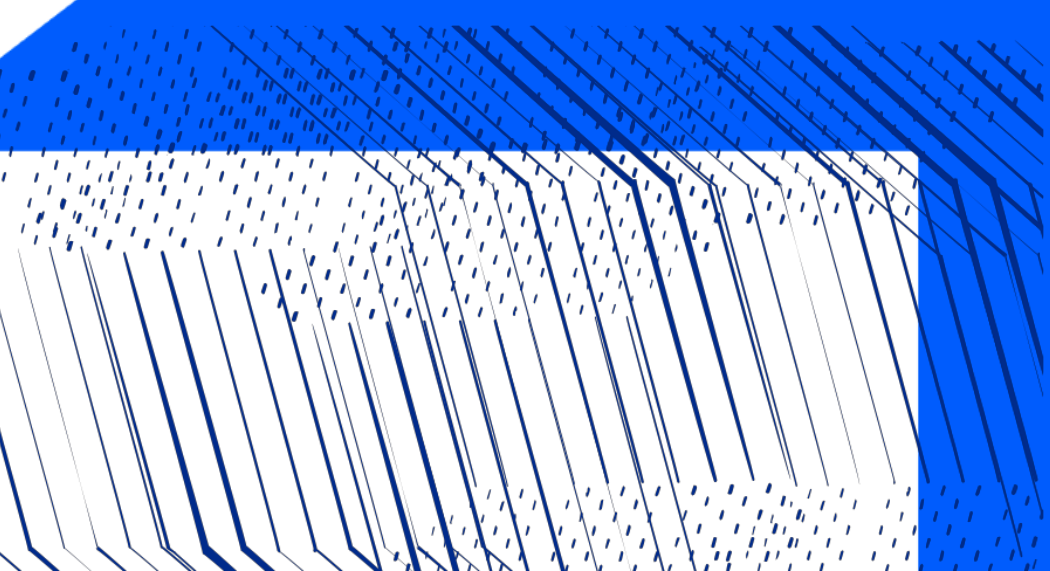


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# Software Management in HEP Research Organisation's

Elizabeth Bain and Liam Brennan

STFC-UKRI



# Agenda

## 1 IP rights in Software

Copyright, Patentable Inventions, Know-How  
Mucky software, who owns the Rights

## 2 Business Models

Licensing Scenarios  
OSS, Academic, Industry  
Collaborative/ Cooperative Models  
Licensing to a Spinout

## 3 Management Day to Day

Policies  
Repositories – Logs  
IP Database  
Forms  
OS Champion & Training, Resources,



# Software Rich Organisations

- Simulation toolkits - Geant4 (a toolkit for the simulation of the passage of particles through matter)
- Control systems - EPICS (Experimental Physics and Industrial Control System)
- Material & Mathematical Libraries
- AI and Machine learning codes for beamline management
- Firmware
- Research Consortia codes



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# IP Rights in Software

Copyright, Patentable Inventions, Know-How  
Mucky software, who owns the Rights



# What IPR is appropriate

Legal right

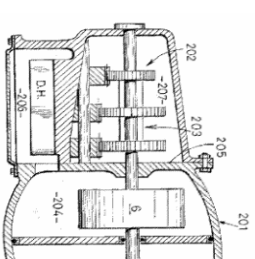
What for?

How?

Patents

New Technical inventions

Application and examination



Copyright

Original creative or artistic forms, reduced to a tangible medium.

Exists automatically/ registration



Know How

Valuable information to the Organisation

Knowledge, skills



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ncil

# Copyright & Software

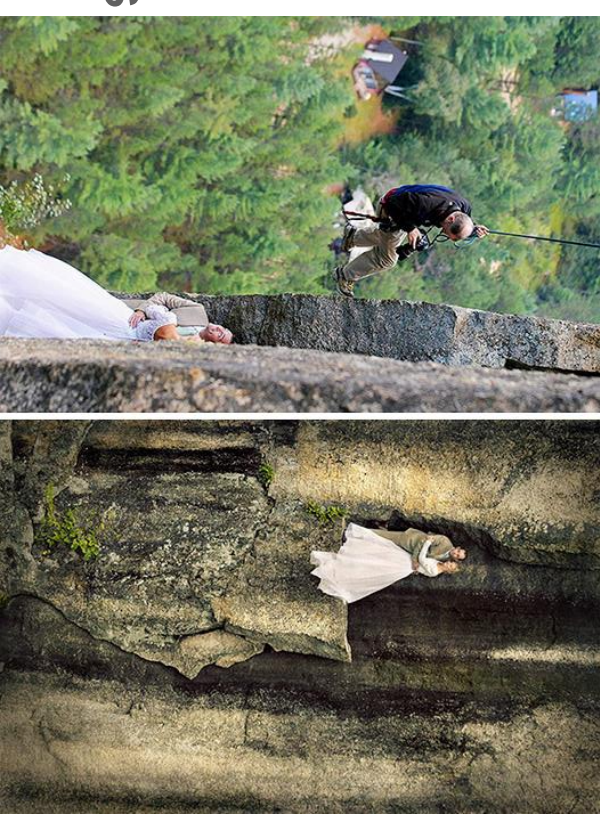
- The written code is protected **NOT its functionality**
- The original creator/owner maintains rights over direct translations, such as writing code into another language.
- Writing code that provides same functionality from scratch are not infringing act.
- Distribution of Software requires a license, academic, commercial or OSS.
- Making copies without a license, distributing, etc. are infringing acts.



# Copyright - Ownership

Dependent on National legislation

- Does the employer own employee's works
  - Employment contracts IP section.
- Contracts.
  - Collaborations- Joint ownership can arise through joint authorships
  - Students are not Employees
  - Commissioner does NOT own commissionee's works
  - Assignment of rights through a contract
  - Contractors are not your employees.





# Best Intentions Mucky Software

- Highly collaborative organisations
- Due diligence to determine ownership - it can be complex to build a clear picture of ownership
- Can we commercialise the messiest multi-party owned assets



# Inventions

Must Be:

- Novel
- Inventive step
- **Covers the technical function**
- Inventors those who came up with the Novelty
- Does the organisation own the rights of the inventor
- Controversial to patent or astute
- Conflicts between patents and copyright
- Commercial Tool



(19) EUROPEAN PATENT SPECIFICATION

(11) EP 1 535 121 B1

- (45) Date of publication and mention of the grant of the patent:  
25.08.2010 Bulletin 2010/34
- (21) Application number: 03729962.6
- (22) Date of filing: 16.05.2003
- (51) Int.Cl.: G05B 19/02 (2006.01) G05B 19/00 (2006.01)
- (86) International application number: PCT/US2003/015459
- (87) International publication number: WO 2003/009553 (04.12.2003 Gazette 2003/49)

(54) SYSTEM AND METHOD FOR AUTOMATICALLY SETTING UP A UNIVERSAL REMOTE CONTROL SYSTEM UND VERFAHREN ZUM AUTOMATISCHEN EINRICHTEN EINER UNIVERSALLEN FERNBEDIENUNG

SYSTEME ET PROCÉDE PERMETTANT DE RÉGLER AUTOMATIQUEMENT UNE TELECOMMANDE UNIVERSELLE

- (84) Designated Contracting States:  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR
- (30) Priority: 20.05.2002 US 151635
- (43) Date of publication of application: 01.06.2005 Bulletin 2005/22
- (73) Proprietor: UNIVERSAL ELECTRONICS, INC.  
Cypress, CA 90630-4841 (US)
- (72) Inventors:  
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Laguna Beach, CA 92651 (US)
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Oswang LLP  
90 High Holborn  
London WC1V 6XX (GB)
- (56) References cited:  
EP-A- 1 198 069 EP-A2- 0 780 990  
WO-A-00/17238 WO-A-01/09150  
WO-A-01/69567 US-A- 5 410 326  
US-A- 5 646 608 US-A- 5 742 730  
US-A- 6 104 334

EP 1 535 121 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

# Know-How

## Tangible Know-How

Processes, methods that have been recorded, Workflows, algorithms, simulations, models

## Intangible Know-How

Expertise, skills, knowledge



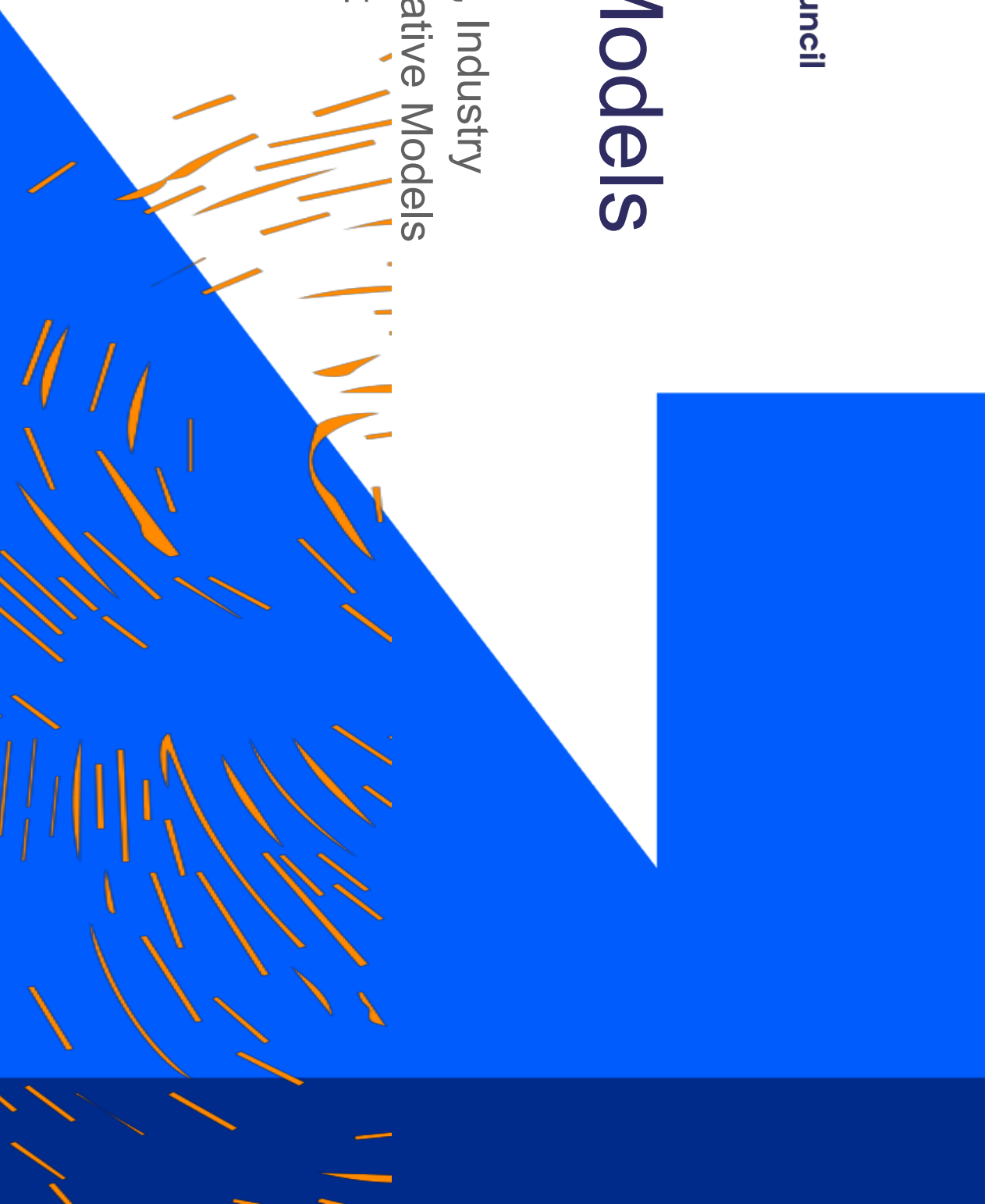


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# Business Models

Licensing Scenarios

- OSS, Academic, Industry Collaborative/ Cooperative Models Licensing to a Spinout



# Different Licensing Scenarios

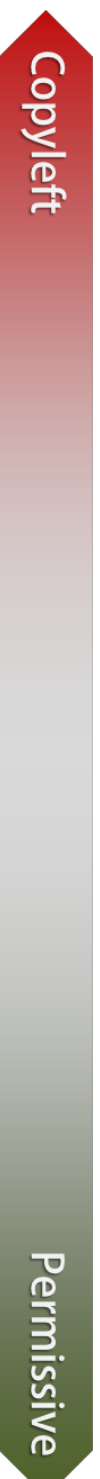
- OSS License – requires promotion and governance
- Academic License, Contributory License - automate if possible
- Commercial License
  - Software is usually in an alpha state
  - Evaluation License
  - Is it economically viable, (DL-Poly a molecular simulation package, HSL)
    - set up matrix of fixed term royalties, per seat, per site
- License to Spin-out to develop the software

# Open Source Software Licenses

## Software Development and Distribution

### Open Source Licenses

GPL3   GPL2   L-GPL   Mozilla   Apache   MIT   BSD



#### **Copyleft License**

GPL- Complicated, ambiguous,  
litigious and viral

#### **Permissive License**

Simple non-litigious, commercially  
friendly

## Copyright Statements in different languages

# Open Source Champions

- Individuals in the organisation knowledgeable in OSS
- Training
  - OSS Watch
  - ASTP Digital SIG
- Forms
- OSS Policy
- Resources



**Jisc**

## OSS Watch team blog

open source software advisory service

**New OSS Watch videos!**

By Scott Wilson on November 27, 2017  
Community, Education, Video

As part of a project on Open Innovation at the University of Edinburgh, Scott Wilson from OSS Watch took part in a series of videos on software in open innovation, particularly open source. All the videos are licensed under Creative Commons CC-BY-SA, so feel free to use them in your courses and training materials.

The videos can be [viewed and downloaded from the University of Edinburgh Media Hopper](#).

Posted by Scott Wilson on November 27, 2017 in Community, Education, Video.

**Untangling the university web presence with OpenScholar**

**Licence differentiator**

This tool attempts to help its users understand their own preferences in relation to free and open source software licenses. It is no substitute for reading the licenses themselves, and before placing any of your property under one of these licenses. The classifications of license type that enable this tool to work are by necessity somewhat reductive, and therefore output of this tool cannot and must not be thought of as legal advice.

**REMEMBER: ALWAYS READ AND UNDERSTAND YOUR CHOSEN LICENSE.**

**Choice One**

Do you want to limit the results to licenses that the Open Source Initiative describes as being 'popular and widely used or with strong communities'?

This will guarantee that the license will be 'mainstream' at the possible expense of some more esoteric but possibly useful characteristics.

Please choose

**Choice Two (a)**

All Free and Open Source licenses will allow others to make modified versions of your code, and to reuse these modified versions with others. Your license can make conditions of this kind, but this happens - specifically what licenses can be used on these modified versions. These conditions can help keep your code free, but they can also put some people off reusing your code.

Do you want to include licensing conditions on reuse?

If not, your license will be one of the so-called 'permissive' licenses.

Please choose

**Choice Three**

A 'jurisdiction' refers to a specific location or territory and its system of law. Where a license specifies a jurisdiction, the licensor and the licensee(s) agree that the terms in the license are to be interpreted in accordance with the law of that jurisdiction. This is not always necessary, but it can be useful to specify a jurisdiction, particularly where the license is intended to be used in some of the territories covered by the license. The license will specify the jurisdiction under which the license is intended to be used.

Please choose

Welcome to the OSS Watch team blog, where you can read the personal views of individual OSS Watch team members.

This makes the content here quite different from the materials published on the OSS Watch site. Those materials go through a rigorous quality assurance process to ensure they are balanced, as is required from a service intended to facilitate informed decision. Here there are no considerations of balance.

Academic Free License 3.0	(No score)
Adaptive Public License	(No score)
AfterCommons Public License	(No score)
Apache License 2.0	(No score)
Artistic License 2.0	(No score)
Attribution Assurance Licenses	(No score)
Broad Software License	(No score)
Common Development and Distribution License	(No score)
Common Public Attribution License 4.0	(No score)
Common Public License 4.0	(No score)
Common Public License	(No score)
Edgewise Public License	(No score)
Educational Community License Version 2.0	(No score)
Eiffel Forum License v2.0	(No score)
European Union Public License	(No score)
Fast License	(No score)
GNU General Public License	(No score)
GNU General Public License v3.0	(No score)
GNU Library or 'Lesser' General Public License	(No score)
GNU Library or 'Lesser' General Public License v3.0	(No score)
Historical Permission Notice and Disclaimer	(No score)

# Cooperative Models

Mixed ownership partners agree to reinvest royalties to project

CCP4 Software for Macromolecular X-Ray Crystallography

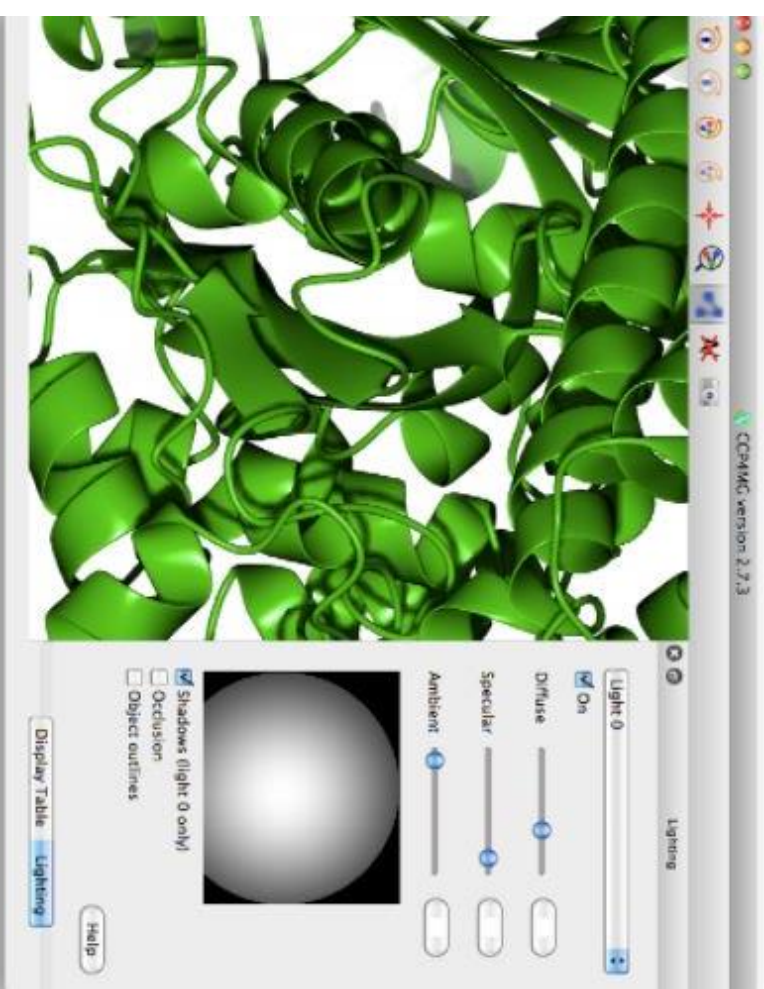
- user interface that interfaces with partner codes, manages different languages, licenses (OSS) and protocols.

Industrial Licenses to big pharma of the user interface

Income redistributed to the project

Academic contributory Licenses flow back rights to proprietary code

CCPEM to Follow





# Automation of License's

Automation of Academic licenses, first step

E-Lucid platform

CASTEP A full-featured materials simulation package based on a quantum mechanical description of electrons and nuclei.

504 orders since we went live in March 21 – around 100 per month.

We will trial a standard HSL commercial license next.

Then our DL Academic and commercial licenses.

## CASTEP

**A full-featured materials simulation package based on a quantum mechanical description of electrons and nuclei.**

CASTEP is a leading code for calculating the properties of materials from first principles. Using density functional theory, it can simulate a wide range of materials properties including energetics, structure at the atomic level, vibrational properties, electronic response properties etc. In particular it has a wide range of spectroscopic features that link directly to experiment, such as infrared and Raman spectroscopies, NMR, and core level spectra.

Research groups can apply for a CASTEP academic source code licence, which is free-of-charge for non-commercial use. STFC (CosSeC) administers academic licences on behalf of Cambridge Enterprise and the CASTEP Developers Group. Prospective commercial users can obtain CASTEP through the BIOVIA Materials Studio product.

For further information, documentation, tutorials and community news, please visit <http://www.castep.org>.

Community support and archives can be found at the [CASTEP mailing list](http://www.castep.org).



### CASTEP Academic Licence

Preview terms

Term: 4 years

Price per 1 group:  
£0.00 excl VAT

[ORDER NOW](#)

# Licensing to Spin-out

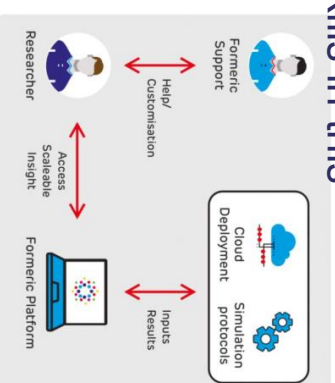
- Software is usually in an alpha state.
- Raise investment to develop the code.
  - Require evidence of providence
  - Patent?
- In a position to supply software support.
- Given the amount of Software in our organisations is a specific policy required to enable Spin-outs as a route to market

# Software Spinouts

## Formeric Ltd

The platform can directly enhance de novo formulation design and thereby reduce time to market by

- providing easy access to sophisticated modelling, simulation and data tools in a language familiar to formulation scientists rather than computer scientists
- Automatically deploying these tools onto the cloud alleviating the need for formulation scientists to acquire specialist skills in this domain.

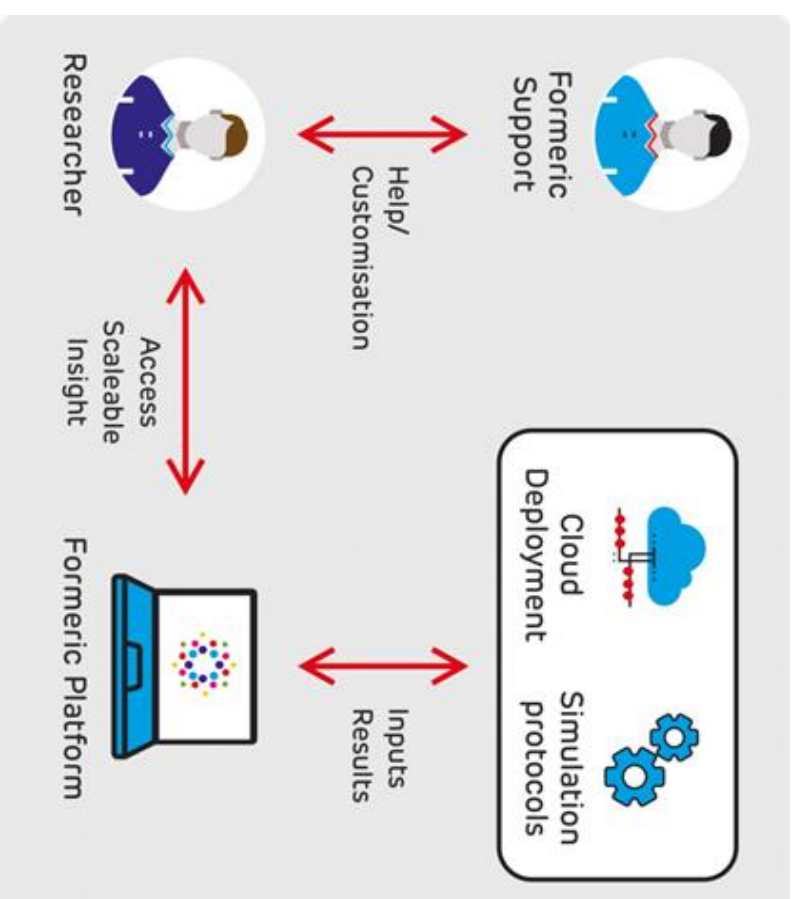


## Atheras Analytics Ltd

- Atheras Analytics has developed a suite of software tools for managing satellite ground station Ka and Q/V-band communications links.
- Mitigating against significant atmospheric impairments, primarily from rain, which can lead to significant service outages.
- The vast number of gateways and switching required to deliver these services presents design and operational challenges that have not been faced before

# FORMERIC – Virtual Formulation Made Easy

- Formeric is making HPC simulation an essential component for chemists.
- Enabling the digital design of formulated products:
  - Reducing cost and time for new product development.
  - Enhancing product insights.
  - Integrated and secure in the cloud.
- Provides world-leading algorithms on a cloud hosted HPC platform in an easy-to-use pay as you go simulation service.

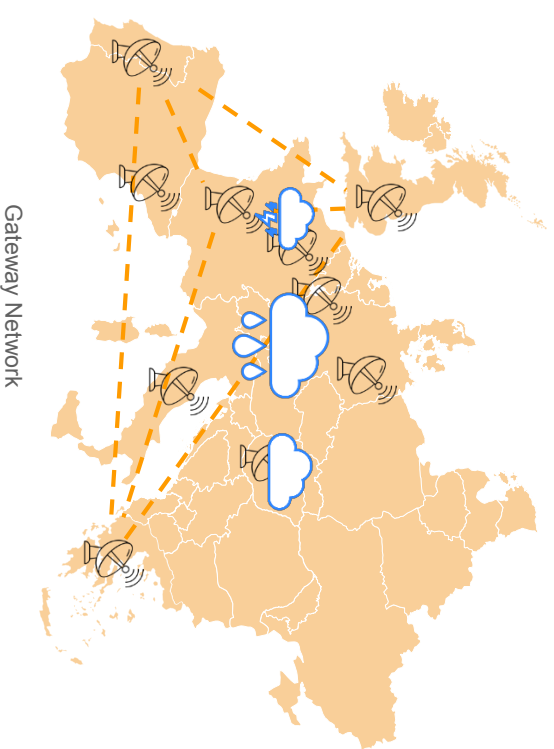


# Atheras – Challenge

- Next generation high throughput satellite data services require:-
  - a. the use of much higher frequencies (Ka and Q/V bands); and
  - b. a much larger number of gateways – tens or hundreds of gateways rather than single digits
- High frequencies are much more sensitive to rain – which leads to service outages
- Networks of tens or hundreds of gateways present design and operational challenges that have not been faced before



Satellite

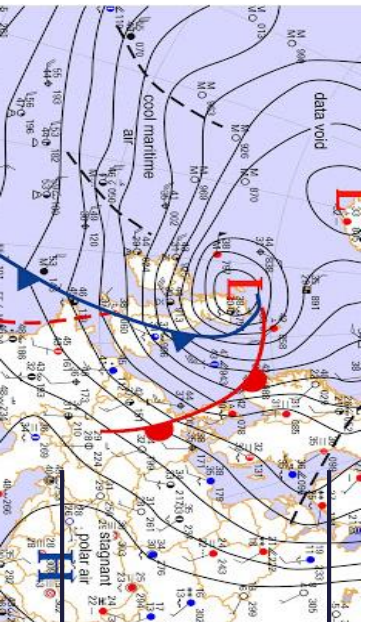


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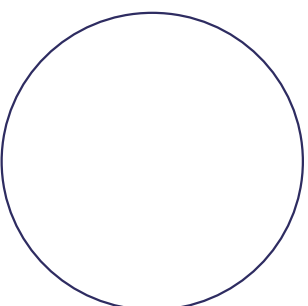
# Atheras – Solution

Atheras Analytics is developing a suite of two software tools:-

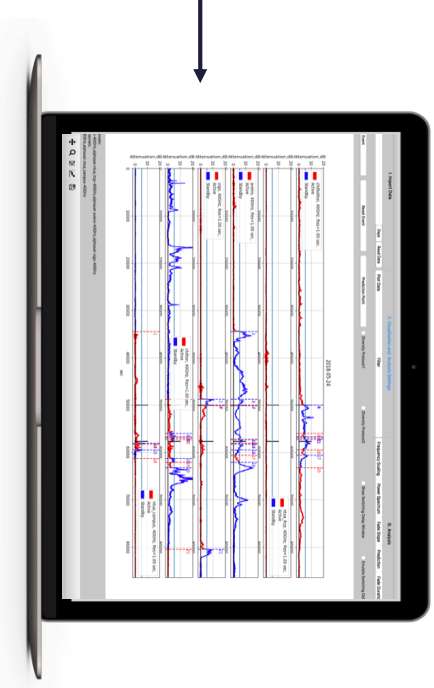
- the **SGD Design Tool** that will enable satellite operators to optimise the design of their next-generation, multi-gateway satellite networks to provide the most cost-effective design; and,
- the **SGD Operational Tool** that will enable operators to effectively manage their networks by predicting rain outages and automatically transferring traffic to alternate gateways before these outages occur



Use of measured weather  
data and proprietary  
attenuation data



Data applied to proprietary  
models and algorithms to  
design and operate  
networks of satellite  
gateways



Optimized design and operation  
of satellite ateway networks



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# Management Day to Day

Policies

Repositories – Logs

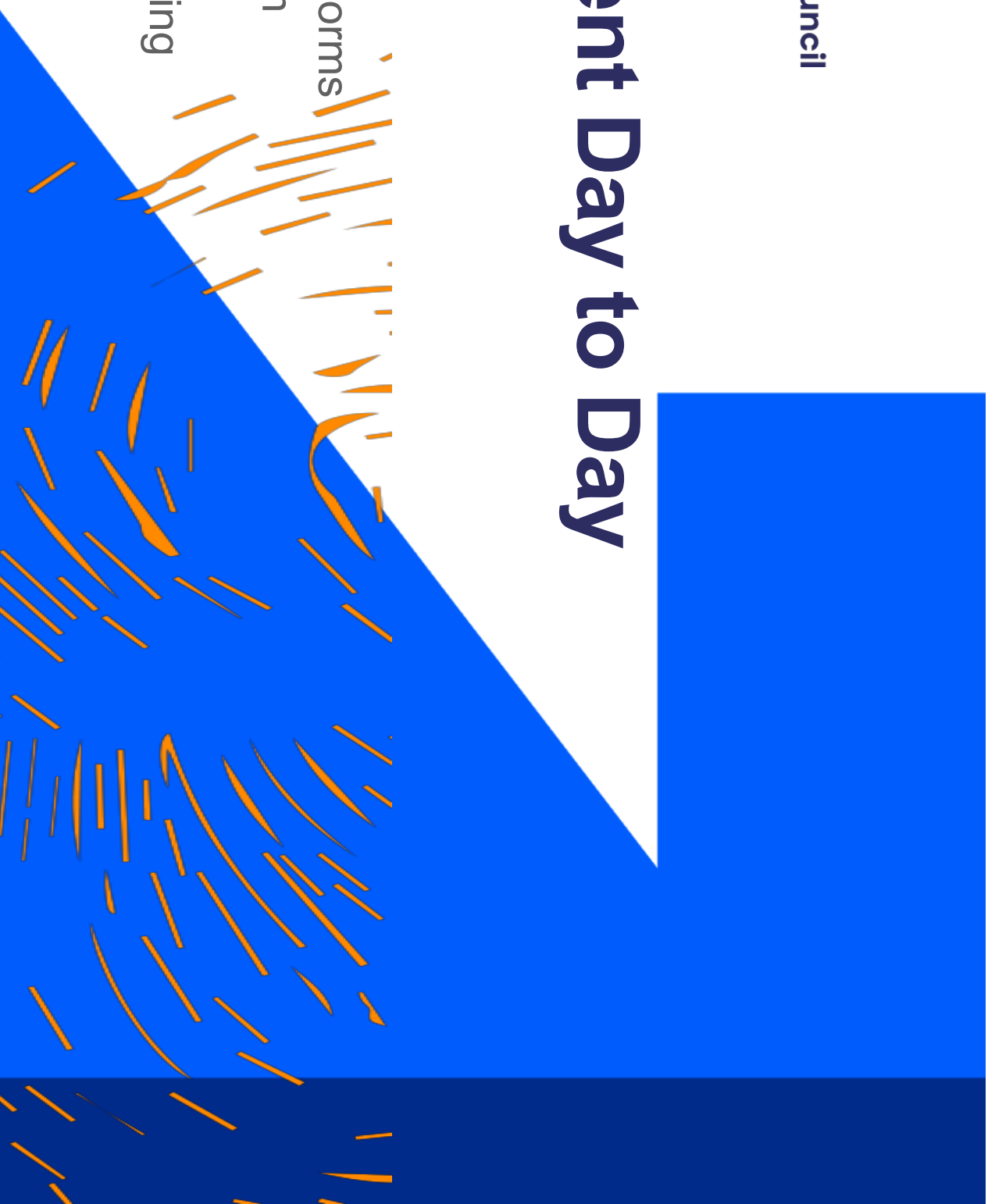
IP Database

Software Disclosure Forms

License Request Form

Resources,

OS Champion & Training



# Policy

- IP Policy
  - Reservation of rights to ensure the organisation always maintains rights of any (IP) software that is required to operate the facilities.
- OSS Policy
  - Short set of rules or guidance on;
    - preferred OSS licenses,
    - have a voice in a consortium if the code is to be OSS
    - who to go to request permission for releasing code on an open source license,
    - Reference to Software disclosure forms and license request forms.
- Spin-out Policy? Should we have one?



# Repository

- Encourage use of Central Logs
  - GIT Lab
  - GIT Hub – organisation page

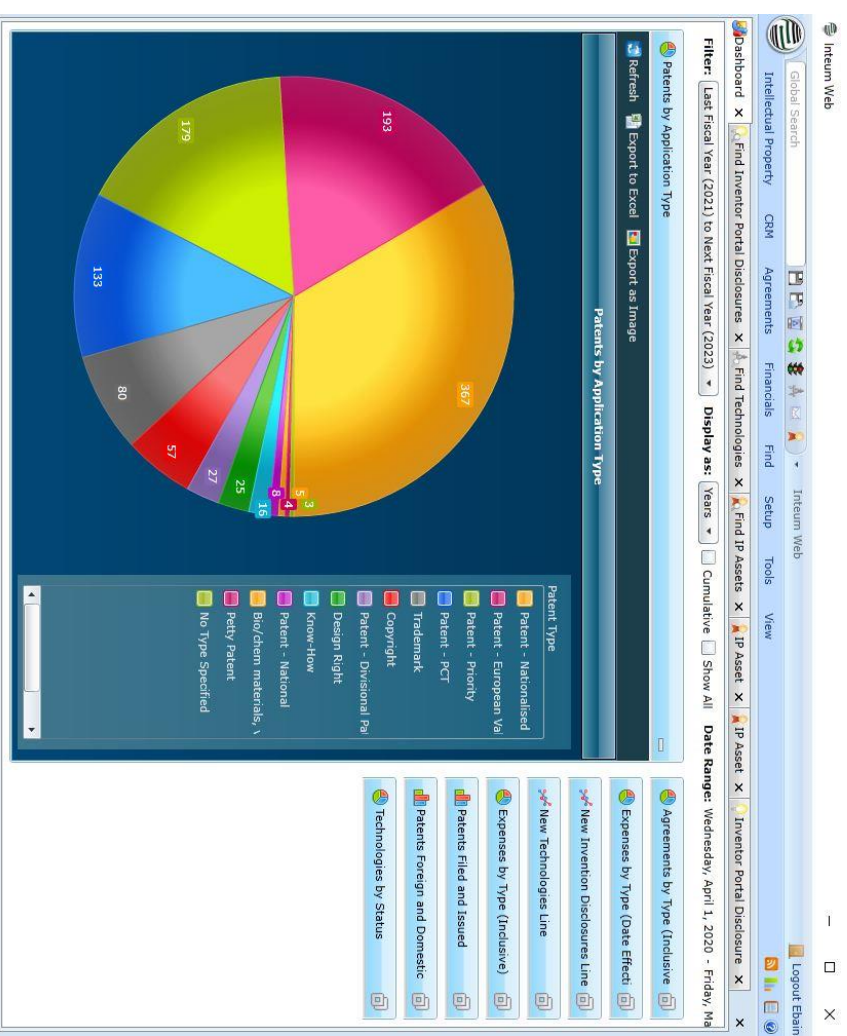


The screenshot shows a GitHub repository page for the UKRI Science and Technology Facilities Council. The repository is named 'RegentParticleDSL' and is described as 'A particle-method DSL based on Regent programming language'. It has 112 repositories, 15 packages, and 15 people. The page includes a search bar, a 'Find a repository...' input, and filters for 'Type', 'Language', and 'Sort'. The repository details show it was updated 1 hour ago and has 5 stars, 2 forks, and 4 issues. The 'Most used topics' section lists 'python', 'fortran', 'game', 'hackerfest', and 'pygame'. The 'Top languages' section lists 'Python', 'JavaScript', 'Java', and 'Shell'. The 'People' section shows 15 contributors.

# IP Database

## Logging Software activity

- Log SDF's & IDF's
- Automate
  - NDA's
  - Simple License Templates
- Log copyright and Patents
- Associate related license
- Log Royalty income and 3rd party obligations (collaborators)
- Mechanism for storing/distribution of income to parties (3rd Parties/Awards)



# Software Disclosure Forms

- Information requested
  - Title and date, name of creator, department
  - Brief description
  - Is it a
    - modification of existing software,
    - any dependencies - Libraries.
  - Any preferences for distribution (OSS, Academic, commercial)
  - History
    - Funding obligations,
    - any collaborators,
    - does anyone else have rights to use the code

Invention ID: CPM-2021-015  
 Title: FPGA based 10Gb Ethernet Core

Submitted By: John Smith  
 Original Submission: 18/07/2021  
 Status: Approved  
 Updated Date: 18/07/2021  
 Last Submitted Date: 18/07/2021

Type: 2. Software / Copyrightable Material  
 Last Submitted Date: 18/07/2021  
 Status: Logged

Technology	Key ID	Title	Manager	Status	Submission Date	Status Date
	21-2025	FPGA based 10Gb Ethernet Core	John Smith	Approved	18/07/2021	18/07/2021

Main Information

Name of Software or Code: FPGA based 10Gb Ethernet Core

Developer/Department: Technology - Chatterbox

Sponsoring Department: Technology - Chatterbox

Technology - Chatterbox

Is this a modification (or modified work) to an pre-existing piece of software? N

What are your thoughts on distributing this software?  
 The source code and dependencies are currently stored on the STFC GitHub. This also includes associated binaries and dependencies.

Any additional comments

Inventors	Name	Role	Email	Contribution Type	Contribution %	Company	System
	John Smith	Lead	john.smith@stfc.ac.uk	100.00%	STFC	UK	Technology

Funding & Licences

# License Request Form

- Form
  - Title of Software
  - Customer Detail
  - Term of the license
  - Commercial and Technical Contact for both organisations.
- Process
  - The form completes a template license which is circulated for signature.

**Agreement**

[Save As Draft](#) [Download As PDF](#) [Download As Word](#)

Agreement Type:

Commercial Licence evaluation (this) licence for software Agreement id:

Please enter a title or a short description of the project. (250 Character limit)  
COP EMI Commercial Evaluation Test  
#N.B. STFC POC selected as mock example.

**Main Party**

**Other Parties** Find Company by name:  [Search](#)  
Selected Company/ University:

Current Status:

This agreement has been approved. You cannot edit the agreement but you can still be added. Check back often for updates on this agreement.

[Set Back to Draft](#)  
**Complete**  
Complete to Status:

# Contracts

Template as Much as possible

- Collaboration Agreements
  - tend to be based around patentable inventions
  - remember joint IP for Copyright should be treated differently
- DESCA agreement has Software section



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# Questions?





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# Thank you

For IPR questions please contact

[Elizabeth.bain@stfc.ac.uk](mailto:Elizabeth.bain@stfc.ac.uk) or [Hari.parambil@stfc.ac.uk](mailto:Hari.parambil@stfc.ac.uk)



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