



Invenio

Digital Library Framework

Tibor Šimko
@tiborsimko

27 November 2015

What is Invenio?

- digital library and document repository software
 - mature platform: first public release in 2002
 - rich data: articles, books, notes, photos, videos, data, code
- originated in high-energy physics
 - institutional repository: CERN Document Server
 - integrated library system: CERN Library
 - disciplinary repository: INSPIRE
- nowadays co-developed by an international collaboration



- participating in and collaborating with several EU projects



Invenio 1

Example: cds.cern.ch

CERN Accelerating science Sign in Directory

CERN Document Server

Access articles, reports and multimedia content in HEP

Search Submit Help Personalize

Search 1,262,525 records for:

Search

[Search Tips](#)

[Advanced Search](#) +

Articles & Preprints (1,086,540)

[Published Articles](#) (534,677) [Preprints](#) (671,856)

[Theses](#) (18,873) [Reports](#) (6,913)

[CERN Notes](#) (36,649)

[Committee Documents](#) (24,269)

Books & Proceedings (100,511)

CERN Articles & Preprints (105,016)

[CERN Published Articles](#) (57,284) [CERN Preprints](#) (17,706) [CERN Theses](#) (4,690)

[CERN Reports](#) (1,180) [Committee Documents](#) (24,269)

CERN Series (18,729)

[CERN Annual Reports](#) (115) [CERN Yellow Reports](#) (1,150) [CERN Theory](#) (13,390)

E.g. CERN books and loans


Results overview: Found 2 records in 0.48 seconds.

Books, 1 records found

Book Proposals, 1 records found

Books

1 records found

1.  **Programming in Python 3 : a complete introduction to the Python language** / Summerfield, Mark

Upper Saddle River, NJ : Prentice-Hall, 2009. - 525 p.

[ebook - CERN library copies](#)




This
book at
Amazon

[Detailed record - Similar records](#)

Add to basket

Book Proposals

1 records found

1.  **Python in practice: create better programs using concurrency, libraries, and patterns** / Summerfield, Mark
- Python in Practice presents Python programming technologies and techniques to help programmers write code that's elegant, maintainable, and fast. [...]
- Addison-Wesley Professional, 2013. - 360 p.

This
book at
Amazon

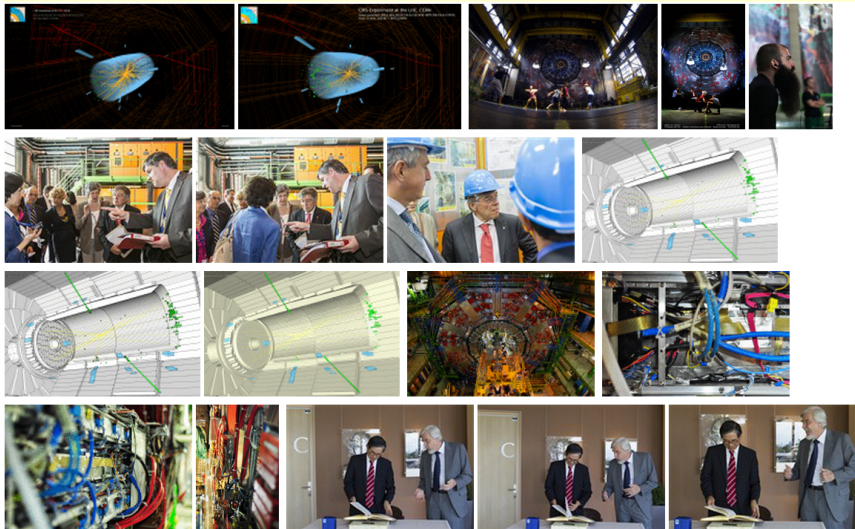
[Purchase it for me! - Suggest for library](#)

[Detailed record - Similar records](#)

Add to basket

E.g. CERN photo search

Photos 1,545 records found 1 - 10 ▶▶ jump to record: Search took 0.48 seconds.



Example: inspirehep.net



Welcome to [INSPIRE](#), the High Energy Physics information system. Please direct questions, comments or concerns to feedback@inspirehep.net.

HEP :: HEPNAMES :: INSTITUTIONS :: CONFERENCES :: JOBS :: EXPERIMENTS :: JOURNALS :: HELP

HEP Search

High-Energy Physics Literature Database

Use "find" for SPIRES-style search ([other tips](#))

Brief format Search [Easy Search](#) [Advanced Search](#)

[find j "Phys.Rev.Lett.,105*" :: more](#)

HOW TO SEARCH

SPIRES syntax is (mostly) supported (requires "find")

- [find a richter, b and t quark and date > 1984](#)
- [find j phys.rev.,D50,1140 or j hep,0903,112](#)
- [find eprint arxiv:1007.5048](#) (Note the plots available on the detailed record)
- [find fulltext "quark-gluon plasma"](#) (Note new "fulltext" operator)
- [find a ellis and refersto a witten](#) (Note "refersto")
- [find a kane and citedby title SUSY and topcite 200+](#) (Note "citedby")

New techniques:

- [1985 richter quark multiplicity](#)
- [arXiv:1007.5048](#)
- [citedby:author:ellis -refersto:author:witten](#)
- [author:randall | author:sundrum cited:450->1350](#)

Additional Help:

[More search tips](#) and [full help](#)

HEP

- [Search Tips](#)
- [INSPIRE Help](#)
- [Corrections](#)
- [Additions](#)
- [Email Us](#)

INSPIRE

- [About INSPIRE](#)
- [Recent topics](#)
- [HEP Reviews](#)
- [SPIRES-HEP \[?\]](#)

RESOURCES

- [ADS](#)
- [arXiv](#)
- [HepData](#)
- [PDG](#)

INSPIRE NEWS

2013-03-14 Use INSPIRE to generate your TeX bibliography, see [http://arxiv.org/abs/1303.3588](#)

E.g. citation summary

standard model Citesummary Search [Easy Search](#)
[Advanced Search](#)
[find j "Phys.Rev.Lett.,105"](#) :: [more](#)

Sort by:

Display results:

latest first desc - or rank by - 25 results single list

Citations summary

Generated on 2014-11-13

42915 papers found, 38790 of them citeable (published or arXiv)

Citation summary results

Total number of papers analyzed:

[38,790](#)

Published only

[23,739](#)

Total number of citations:

1,150,182

1,036,646

Average citations per paper:

29.7

43.7

Breakdown of papers by citations:

Renowned papers (500+)

[160](#)

[153](#)

Famous papers (250-499)

[368](#)

[350](#)

Very well-known papers (100-249)

[1,821](#)

[1,706](#)

Well-known papers (50-99)

[3,163](#)

[2,891](#)

Known papers (10-49)

[12,253](#)

[10,176](#)

Less known papers (1-9)

[14,084](#)

[7,027](#)

Unknown papers (0)

[6,941](#)

[1,436](#)

h_{HEP} index [\[?\]](#)

327

322

E.g. citation history

Co-cited with: 22512 records

(1264) [Neutrino Mass and Spontaneous Parity Violation](#) - Mohapatra, Rabindra N. *et al.* Phys.Rev.Lett. 44 (1980) 912 MDDP-TR-80-060, MDDP-PP-80-105, CCNY-HEP-79-10

(568) [Neutrino Masses in SU\(2\) x U\(1\) Theories](#) - Schechter, J. *et al.* Phys.Rev. D22 (1980) 2227 SU-4217-167, COO-3533-167

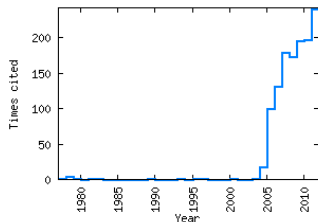
(538) [Baryogenesis Without Grand Unification](#) - Fukugita, M. *et al.* Phys.Lett. B174 (1986) 45 RIFP-641

(462) [Neutrino Masses and Mixings in Gauge Models with Spontaneous Parity Violation](#) - Mohapatra, Rabindra N. *et al.* Phys.Rev. D23 (1981) 165 FERMILAB-PUB-80-061-THY, FERMILAB-PUB-80-061-T

(418) [Proton Lifetime and Fermion Masses in an SO\(10\) Model](#) - Lazarides, George *et al.* Nucl.Phys. B181 (1981) 287 FREIBURG-THEP-80-2

[more](#)

Citation history:



E.g. INSPIRE author page

Dixon, Lance Jenkins

[View Profile](#)

[Manage Profile](#)

[Manage Publications](#)

[Help](#)

PERSONAL INFORMATION

Personal Details (HepNames)

Name Lance J. Dixon

Current Institution SLAC

E-mail lance@slac.stanford.edu

Links <http://www.slac.stanford.edu/~...>

Fields HEP-PH
HEP-TH

Identifiers BAI: [L.J.Dixon.1](#)
INSPIRE: INSPIRE-00077352

Period	Rank	Institution
1978 – 1982	UG	Caltech
1982 – 1986	PHD	Princeton U.
1986 – 1987	PD	SLAC

PUBLICATIONS AND OUTPUT

Publications Datasets External

1. Universality in W+Multijet Production
2. Bootstrapping an NMHV amplitude through three loops
3. Universality in W+Multijet Production
4. Bootstrapping six-gluon scattering in planar N=4 super-Yang-Mills theory
5. Next-to-Leading Order Gamma Gamma + 2-Jet Production at the LHC
6. The four-loop remainder function and multi-Regge behavior at NNLLA in planar N = 4 super-Yang-Mills theory
7. Next-to-leading order diphoton+2-jet production at the LHC
8. Ntuples for NLO Events at Hadron Colliders
9. A brief introduction to modern amplitude methods
10. The BlackHat Library for One-Loop Amplitudes

[Click here to see all](#)

Co-Authors

[Z.Bern.1 \(90\)](#)
[D.A.Kosower.1 \(64\)](#)
[F.Febres.Cordero.1 \(25\)](#)
[H.Ita.1 \(23\)](#)
[D.Maitre.1 \(21\)](#)
[D.Seymour.1 \(16\)](#)

Papers

	All papers	Single authored
All papers	174	22
Book	0	0
ConferencePaper	55	14
Introduction	2	2

Example: ILO

Labordoc



Search

Resources ▾

Help ▾

English Français Español

Search:

any field ▾

Search

[Search Tips](#) :: [Advanced Search](#)

[Ask a librarian](#) **e-docs only:**

Focus on:



Narrow by collection:

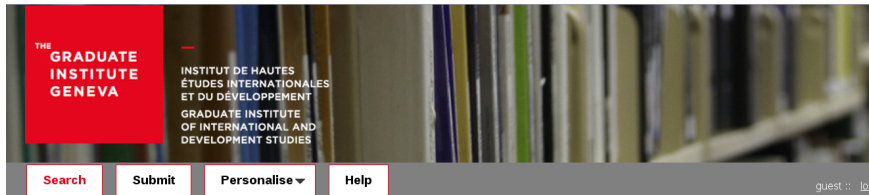
- ILO publications** (82,410)
 - [ILO books](#) (43,441)
 - [ILO journal articles](#) (14,182)
 - [ILO working papers](#) (2,401)
 - [ILO training manuals](#) (4,381)

Latest publications by ILO (86)

- ILO meetings** (26,848)
 - [International Labour Conference](#) (7,227)
 - [Governing Body](#) (19,680)

[ILO Conventions: background and preparatory work](#) (7,007)

Example: IHEID



The Graduate Institute's Publications

Welcome to the institutional repository of the Graduate Institute of International and Development Studies. It contains research produced by its members, including books, book chapters, journal articles, working papers, theses and more.

Publications from the Faculty

Select a Professor...

Search 7,393 records for:

any field

[Search Tips](#) :: [Advanced Search](#)

Recent Publications



Cassese's international criminal law
Cassese, Antonio ; Gaeta, Paola. - 3rd ed. -
Oxford : Oxford University Press, 2013. - 414 p.




European security in NATO's shadow: party ideologies and institution building
Stephanie C. Hofmann. - Cambridge :
Cambridge University Press, 2013. - 264 p

Example: RERO

Submit Personalize Help | DE EN FR IT | guest :: Login

réro doc
Digital Library

See all... 

> Advanced Search

28'741 objects



Working papers SES

The Working Papers SES collection is a series of research papers authored by members of the Faculty of Economics and Social Sciences of the University of Fribourg (Switzerland). This series...

[Collection Page »](#)



Latest news

-  RERO DOC : new interface
2013/11/02

 RERO DOC & Multivo: improved integration

Latest collections

-  Journal « La Gruyère »
2012/09/12

 SDC - SDC Deposit Library
2012/06/05

Content by document type

- > Articles (14'694)
- > Periodicals (5'463)
- > Theses (2'958)
- > Books (2'731)
- > Dissertations (2'369)

Example: EPFL



YOU ARE ▾

BY SCHOOL ▾

ABOUT EPFL ▾

Directory ▾ 🔍

EPFL > **infoscience**

English / français

INFOSCIENCE

Search Browse Deposit / Publish Help



Search publications

Any field 🔍

▶ [Advanced Search](#)

[Search Tips](#)

▶ [Access to the 99,567 scientific publications](#)

▶ [Access to the 9,940 documentary resources](#)

Infoscience, EPFL's scientific publications

[Directive for Research Integrity](#)

[SNSF's Directive for open access publications](#)



Open Access conferences, Thursday October 24, 2013

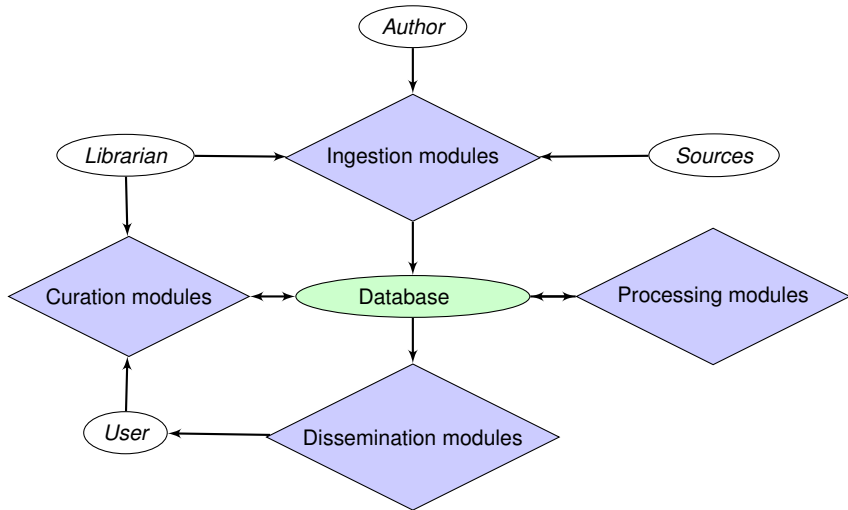
17.09.13 In the context of the Open Access Week, the EPFL library is pleased to invite you to the event « Open Access: authors, publishers, investors and institutions for the dissemination ... »



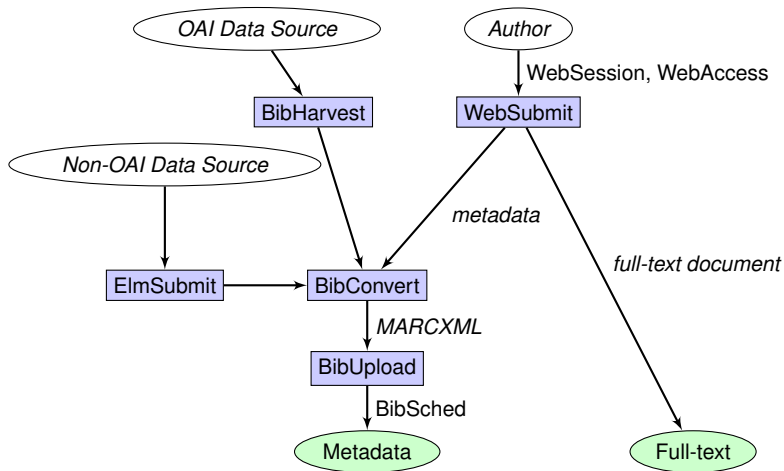
Collecting research data sets: a worldwide movement.

03.06.13 One often hears that the principle of open access is to make research results available online for free as scientific publications (mostly articles). However, scientific research produces increasingly large amounts ... »

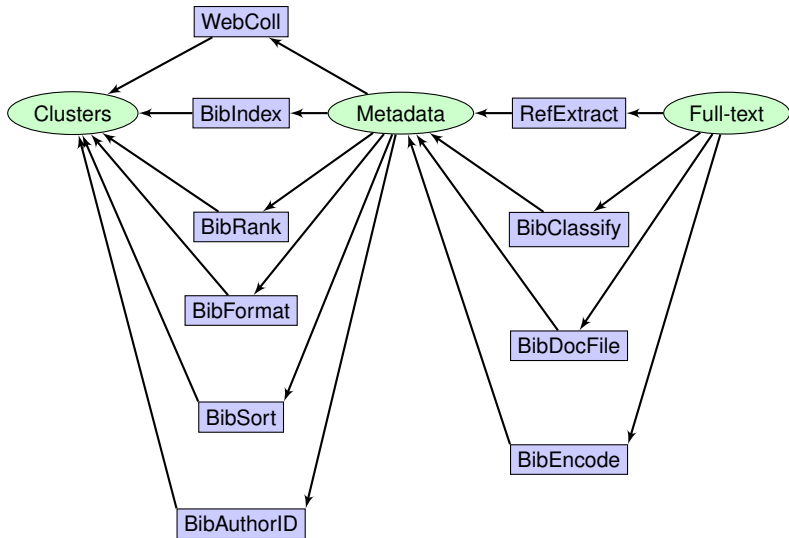
Modular architecture



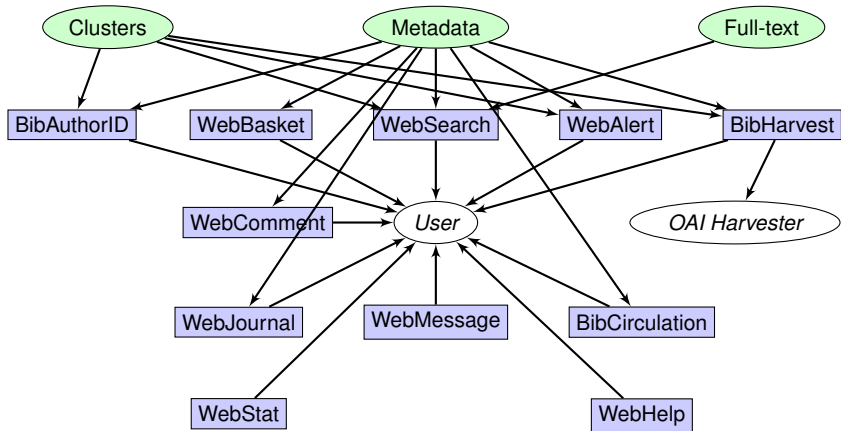
Ingestion modules



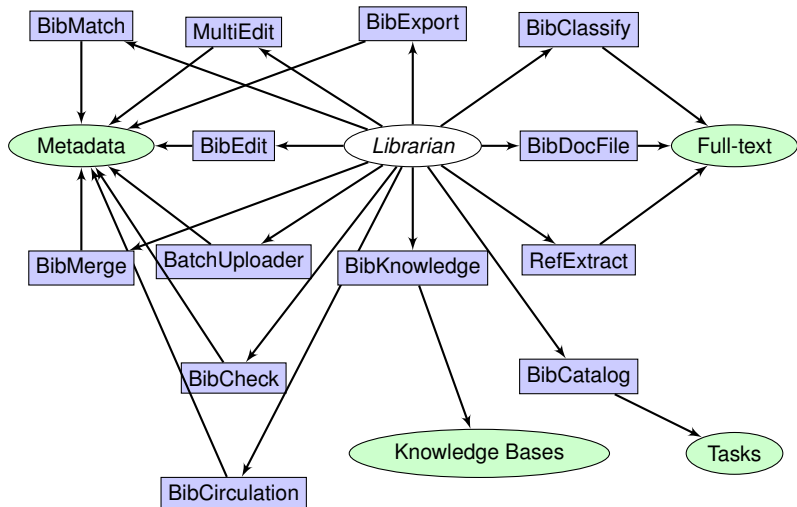
Processing modules



Dissemination modules



Curation modules



Module overview

- 60+ modules
- 450,000+ lines of code
- 160+ authors and contributors since 2002



Invenio 2

Community

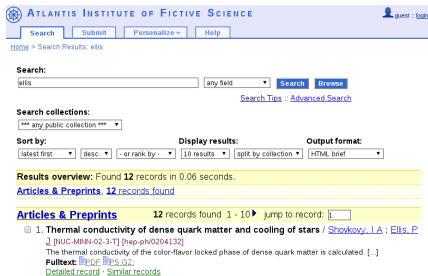


Invenio User Group Workshop 2012

- developer community growing
 - 4 developers and contributors in 2002
 - 48 developers and contributors in 2012
- adapting tools and processes
 - custom tools → mainstream tools
 - custom processes → mainstream processes

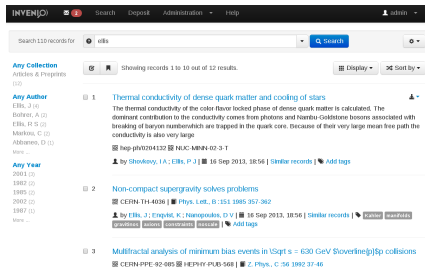
Example: UI evolution

Invenio v1



The screenshot shows the Invenio v1 search interface. At the top, it says "ATLANTIS INSTITUTE OF FICTIVE SCIENCE" with a user profile icon and "guest - login". Below this is a navigation bar with "Search", "Submit", "Personalize", and "Help" buttons. A breadcrumb trail reads "Home > Search Results: ellis". The main search area has a search box containing "ellis", a dropdown menu set to "any field", and "Search" and "Browse" buttons. Below the search box are "Search Tips" and "Advanced Search" links. There are sections for "Search collections:" with a dropdown menu, "Sort by:" with options like "latest first", "desc.", and ".or rank by", "Display results:" with "10 results" and "split by collection", and "Output format:" with "HTML, brief". A yellow banner displays "Results overview: Found 12 records in 0.06 seconds." and "Articles & Preprints, 12 records found". Another yellow banner shows "Articles & Preprints 12 records found 1 - 10 jump to record: 1". The first search result is titled "1. Thermal conductivity of dense quark matter and cooling of stars" by Shovkovy, I.A.; Ellis, P.J. with a link to the arXiv preprint [hep-ph/0204132].

Invenio v2



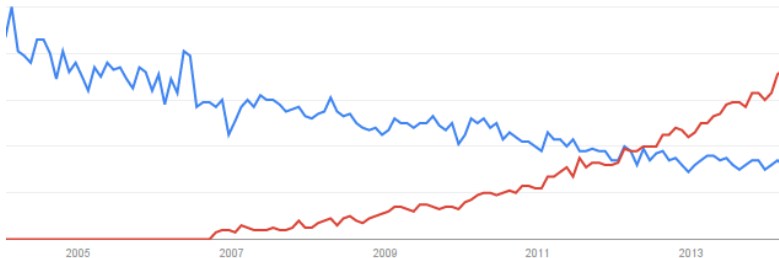
The screenshot shows the Invenio v2 search interface. At the top, it says "INVENIO" with a user profile icon and "admin". Below this is a navigation bar with "Search", "Deposit", "Administration", and "Help" buttons. A breadcrumb trail reads "Search 110 records for ellis". The main search area has a search box containing "ellis" and a "Search" button. Below the search box are "Articles & Preprints 102" and "Showing records 1 to 10 out of 12 results." with "Display" and "Sort by" buttons. There are sections for "Any Author" with a list of authors and "Any Year" with a list of years. The first search result is titled "1. Thermal conductivity of dense quark matter and cooling of stars" by Shovkovy, I.A.; Ellis, P.J. with a link to the arXiv preprint [hep-ph/0204132].

- home-grown CSS (custom)
- fast but niche template engine (Python)

- mainstream CSS (Twitter Bootstrap)
- mainstream template engine (Jinja)

Example: API evolution

- Google search trends: XML API vs JSON API



- standardising upon /api structure

```
(GET|POST) /api/<service_family>/<service_verb>  
/<mandatoryarg>?optarg1=val1&optarg2=val2
```


Overview of technologies

■ front-end:



■ back-end:



■ persistence:

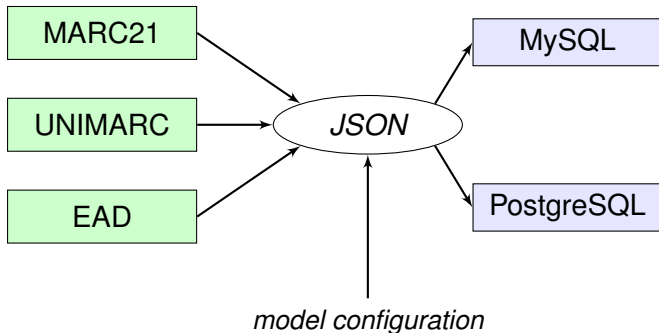


Abstraction of records

■ abstraction of record fields:

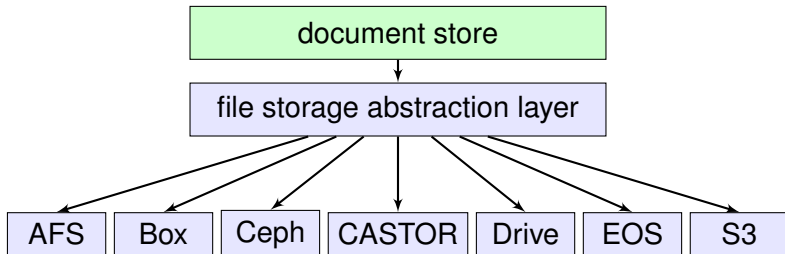
- metadata fields, e.g. author
- derived fields, e.g. number_of_authors
- virtual fields, e.g. number_of_citations

■ abstraction of record formats:



Abstraction of storage

- abstraction of storage media:



Example: BlogForever



Search 641 records for

Any Collection

Posts (29)

Blogs (1)

Any Author

Dave Hill (13)

(unknown) (3)

Nu Bride (3)

0 (2)

Clairetrude (2)

More ...

Any Year

2013 (23)

2011 (3)

2012 (3)

Showing records 1 to 25 out of 30 results.

1



Dave Hill's London blog | UK news | The Guardian

 15 Posts |  **Economics**

2

London school places crisis: quick solutions required

Next Previous Blog home London school places crisis: quick solutions required
The capital's politicians must move fast and effectively to make the government's free schools policy work for its baby boom children Share Tweet this Email School children in Camden [...]

 **Dave Hill** |  2013/04/24 04:10:00 |  **Free schools** **Academies**

Boris Johnson **Local politics** **London** **Local government**

Example: OAIS BagIt

```
/tmp> unzip -t record_59_v1.zip
Archive: record_59_v1.zip
testing: bag-info.txt           OK
testing: manifest-md5.txt      OK
testing: bagit.txt             OK
testing: data/BlogImage_2.metadata OK
testing: data/BlogPostPage_page.html OK
testing: data/BlogPostPage_page.metadata OK
testing: data/BlogImageThumbnail_3.jpeg OK
testing: data/BlogImageThumbnail_3.metadata OK
testing: data/Post_2013-08-20_14:21:21ucnxAN.metadata OK
testing: data/Post_2013-08-20_14:21:21ucnxAN.xml1_mets OK
testing: data/record_59_v1.xml1 OK
testing: data/BlogImage_2.jpeg OK
No errors detected in compressed data of record_59_v1.zip.
```

```
/tmp>
```

Post from blog: Tech Talk

gadgetscan

Posted date

2012/02/28

Archived date

2013/08/20

Topic

No topic yet

Tags

Intel Mobiles samsung

world mobile congress

Add your own tags

License

Unknown

div.bfe-blog-navigation 270px x 50px

Export as

BibTeX, MARC, MARCXML, METS, DC, PDF, JPEG

Share

Facebook Twitter LinkedIn

Other options

Add to Personal Collection
Edit This Record
Ask for Deletion
Manage Files of This Record
Download BagIt
Similar Posts

Intel's mobile plan: Zero to Hero



Intel CEO Paul Otellini show inoff Orange new phone at MWC

The hottest smartphone maker at this year's Mobile World Congress in Barcelona isn't

You didn't know Intel designed phones? Neither did most people until the chipmaking big designed a top-of-the-line smartphone for the global telecom giant Orange.

It all started about a year ago, when extremely frustrated top brass at Intel decided the c its chips would work on mobile phones — a field dominated by mobile chip designing rix PowerPoint presentations, no matter how impressive, just weren't persuading phone ma

So Intel hired several hundred engineers from all over Silicon Valley and opened up a sta inside the company.

Late last year, Intel began to show off the fruit of its labors to the same folks who used b device — designed entirely and exclusively at Intel's Santa Clara headquarters — has al runs Google's (GOOG, Fortune 500) Android operating system beautifully, and looks rer

That shouldn't be surprising. Intel's head of mobility, Mike Bell, worked at Apple (AAPL, iPhone project before leaving for Palm.

"Our device is fully buzzword-compliant," said Bell, in an interview on Tuesday. "Intel is becoming handheld computers. It's natural for us to get into this space."

Intel finally ups the ante in mobile

Intel built a few thousand of the phones and started handing them out to any and all pote PowerPoint couldn't. In addition to Orange, Indian carrier Lava is planning on shipping a quarter, and Lenovo launched a similar phone last month.

Example: zenodo.org

The screenshot shows the Zenodo website interface. At the top left is the Zenodo logo. To its right is the tagline "Research. Shared." Below this is a navigation bar with links for "Search", "Communities", "Browse" (with a dropdown menu), "Upload", and "Get started" (with a dropdown). On the right side of the navigation bar are "Sign In" and "Sign Up" buttons. The "Browse" dropdown menu is open, listing categories: "Datasets", "Images", "Posters", "Presentations", "Publications", "Software", and "Video/Audio". Below the navigation bar is a search bar with a search icon and a "Search" button. To the left of the search bar is a "Filter by types" button with a right-pointing arrow. Below the search bar, the "Recent Uploads" section is visible. It features a card for an upload from "13 November 2014" with tags for "Software" and "Open access". The title is "keyneson: Pretest (with friends, students)" by "Maximilian Held". A brief description follows: "it works! (but results are not meaningful, because there are too few participants)". Below this is the text "Uploaded by maxheld83 on 13 November 2014." and a "View" button. To the right of the search bar are two promotional boxes. The first is titled "Using GitHub?" and includes a GitHub logo and text: "Check out our GitHub integration. Software Preservation Made Simple!". The second is titled "New to ZENODO?" and contains two bullet points: "• Research. Shared. – all research outputs from across all fields of science are welcome!" and "• Citeable. Discoverable. –".

zenodo

Research. Shared.

Search Communities Browse Upload Get started Sign In Sign Up

Datasets
Images
Posters
Presentations
Publications
Software
Video/Audio

Filter by types

Search

Recent Uploads

13 November 2014 Software Open access View

keyneson: Pretest (with friends, students)
Maximilian Held

it works! (but results are not meaningful, because there are too few participants)

Uploaded by maxheld83 on 13 November 2014.

Using GitHub?
Check out our GitHub integration. Software Preservation Made Simple!

New to ZENODO?

- Research. Shared. – all research outputs from across all fields of science are welcome!
- Citeable. Discoverable. –

Code ↔ Data ↔ Paper

- link data (DATAVERSE) to code (ZENODO) to papers (INSPIRE)
- first use cases: hep-ex/0011057, arXiv:1401.0080

The image displays a composite screenshot illustrating the workflow from code to paper. On the left, the Zenodo interface shows a record for 'decouple software associated to arXiv:1401.0080'. The central and right portions show the INSPIRE interface for the paper 'A Novel Approach to Higgs Coupling Measurements' by Kyle Cranmer, Sven Heinke, and David Lopez-Fu. The paper's description includes a link to the Zenodo repository and a 'Download' button. The paper's abstract and keywords are visible, along with a plot showing confidence contours in the μ - κ plane.

Zenodo Record:
decouple software associated to arXiv:1401.0080
Created: 2014-03-12, Last modified: 2014-03-12

INSPIRE Record:
A Novel Approach to Higgs Coupling Measurements
Kyle Cranmer, Sven Heinke, David Lopez-Fu
Dec 30, 2013 - 39 pages
arXiv:1401.0080 [hep-ph] PDF

Description:
This repository contains the software implementation for our paper A Novel Approach to Higgs Coupling Measurements (Cranmer, Heinke, Lopez-Fu, arXiv:1401.0080 [hep-ph]). It contains tools to apply the discussed method to new models and contains a Makefile to recreate the plots in the paper.
A demo for the recoupling stage where the effective likelihood and template parametrization are readily provided is at decoupleDemo.

Abstract (arXiv):
We develop a technique to present Higgs coupling measurements, which decouple the poorly defined theoretical uncertainties associated to inclusive and exclusive cross section predictions. The technique simplifies the combination of multiple measurements and can be used in a more general setting. We illustrate the approach with LHC Higgs coupling measurements and a collection of new physics models.

Keywords: INSPIRE: Automata, Experiments, Linear, Higgs, Collider, LHC, Cal, new physics, decoupling

Plot: A plot showing confidence contours in the μ - κ plane, with μ on the x-axis and κ on the y-axis. The plot shows several overlapping contours representing different measurements or theoretical predictions.

Example: opendata.cern.ch

The screenshot displays the homepage of opendata.cern.ch. At the top left is the 'opendata' logo. The top right navigation bar includes 'ABOUT', 'SEARCH', 'EDUCATION', and 'RESEARCH'. The main content area is split into two columns: 'Education' on the left and 'Research' on the right. The 'Education' section includes the text 'Visualise events, check reconstructed data, run tools or build your own!' and a 'Start learning' button. The 'Research' section includes the text 'Get the genuine working environments, virtual machines and datasets to start your research' and a 'Start analysing' button. In the center, a network diagram features a central hub with lines radiating to various nodes, some of which are labeled with physics symbols: μ (red), γ (grey), τ (blue), q (yellow), and e (green). A diagonal cyan line runs from the top right towards the bottom left. The footer contains the CERN logo, copyright information '© 2014 CERN Open Data Terms of Use Privacy Policy Contact', and logos for ALICE, ATLAS, CMS, and LHCb.

Primary datasets

opendata CMS ABOUT SEARCH EDUCATION RESEARCH

Q Search

🏠 > CMS > CMS Primary Datasets

Mu primary dataset in AOD format from RunB of 2010 (/Mu/Run2010B-Apr21ReReco-v1/AOD) 2014

/Mu/Run2010B-Apr21ReReco-v1/AOD
[CMS collaboration](#)

Cite as: CMS collaboration (2014). Mu primary dataset in AOD format from RunB of 2010 (/Mu/Run2010B-Apr21ReReco-v1/AOD). CERN Open Data Portal. DOI: [10.7483/OPENDATA.CMS.B8MR.C4A2](https://doi.org/10.7483/OPENDATA.CMS.B8MR.C4A2)

Collection **CMS Primary Datasets** Collision Energy **7TeV** Accelerator **CERN-LHC** Experiment **CMS**

Description

Mu primary dataset in AOD format from RunB of 2010

Characteristics

Dataset: 32376291 events 2979 files 3.2 TB in total

System Details

Software release: CMSSW_4_2_1_patch1

Indexes

Visualise detector events

opendata

ABOUT SEARCH EDUCATION RESEARCH

Home > Education > Visualise Events > CMS

Explore CMS open data and visualise detector events

Need HELP?

/Mu.Ig:Events/Run_146436/Event_90626440

- Detector Model**
 - Tracker Barrels
 - Tracker Endcaps
 - ECAL Barrel
 - ECAL Endcaps
 - ECAL Preshower
 - HCAL Barrel
 - HCAL Endcaps
 - HCAL Outer
 - HCAL Forward
 - Drift Tubes (muon)
 - Cathode Strip Chambers (muon)
 - Resistive Plate Chambers (muon)
- Tracking**
 - Tracks (reco.)
- ECAL**
 - Barrel Rec. Hits
 - Endcap Rec. Hits
 - Preshower Rec. Hits
- HCAL**
 - Barrel Rec. Hits
 - Endcap Rec. Hits
 - Forward Rec. Hits
 - Outer Rec. Hits
- Muon**
 - Matching muon chambers
- Physics Objects**
 - Electron Tracks (GSP)
 - Tracker Muons (Reco)
 - Stand-alone Muons (Reco)
 - Global Muons (Reco)
 - Calorimeter Energy Towers
 - JES
 - Mixing Et (Reco)

Example: analysis-preservation

CERN Accelerating science

Sign in Directory

CERN Analysis Preservation

Demo (your data will NOT be preserved!)

Search Deposit

+⚙🔍

JSON Schema based description

```
"primary_dataset": [  
  {  
    "@type": "dcat:Dataset",  
    "title": "/Mu/Run2010B-Apr21ReReco-v1/AOD",  
    "description": "Mu primary dataset in AOD format from",  
    "licence": "CC0 waiver",  
    "persistent_identifiers": [  
      {  
        "identifier": "10.7483/OPENDATA.CMS.B8MR.C4A2",  
        "scheme": "DOI"  
      }  
    ],  
    "issued": "2011-04-26 11:32:43",  
    "modified": "2011-05-02 21:22:30",
```

Invenio 3

Invenio 1 → 2



Bootstrap

Jinja

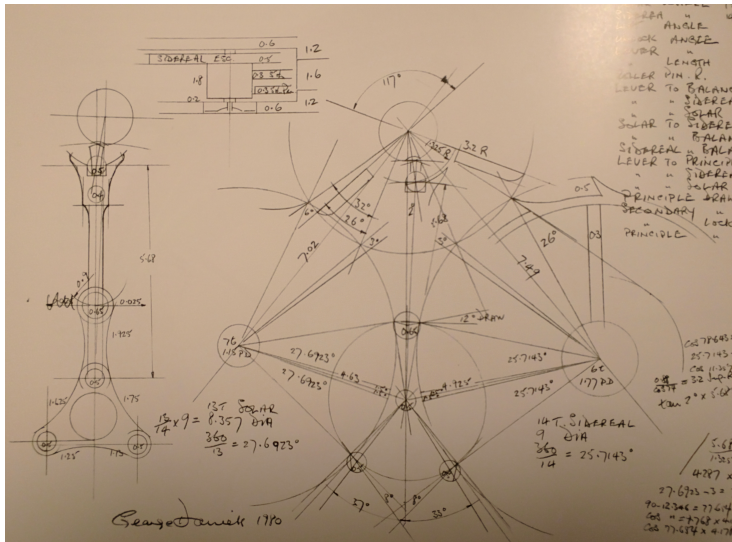


BibSched
BibRank
WebSearch

...

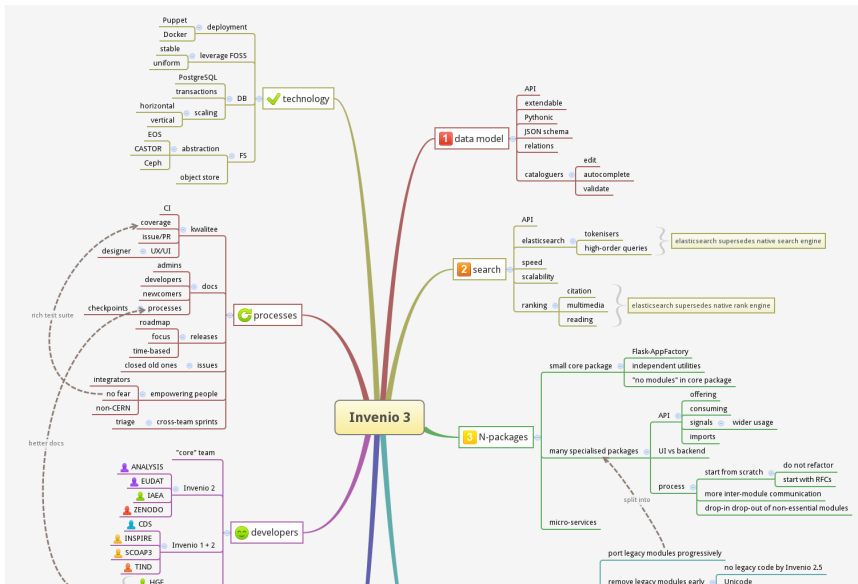
Flask
web development,
one drop at a time

Invenio 3

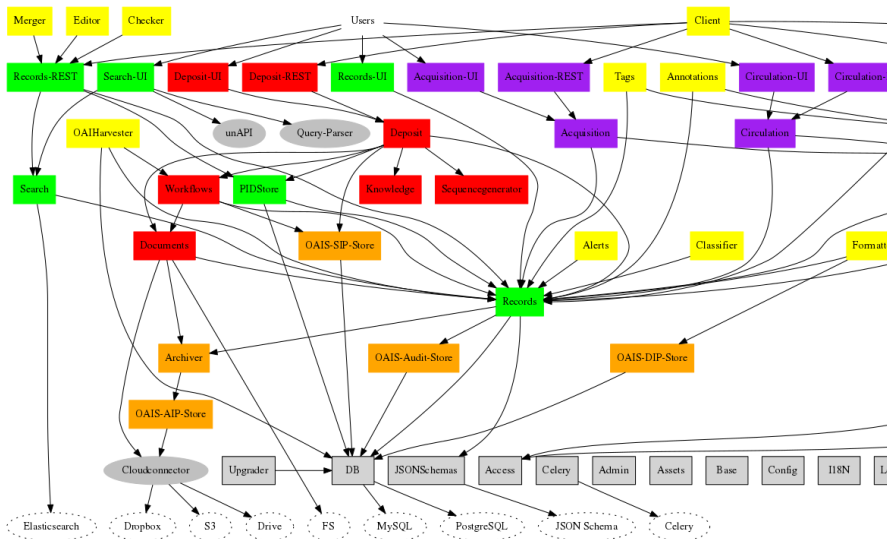


George Daniels's solar/sideral escapement (1980)

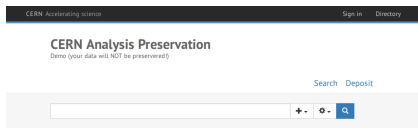
Invenio 3 vision



Invenio 3 architecture



Invenio 3 framework



CERN Analysis Preservation

```
install_requires=[  
    'invenio-collections==0.2.0',  
    'invenio-access==0.2.0',  
    'invenio-accounts==0.2.0',  
    'invenio-groups==0.1.3',  
    'invenio-oauthclient==0.1.1',  
    'invenio-search==0.1.5',  
    'invenio-jsonschemas==0.1.0',  
],
```

setup.py

Invenio 3 status

Package	Build Status	Coverage	PyPI version
Inveniosoftware/flask-breadcrumbs	build error	coverage 98%	pypi v0.3.0
Inveniosoftware/flask-menu	build passing	coverage 99%	pypi v0.5.0
Inveniosoftware/Invenio-access	build passing	coverage 100%	pypi v1.0.0a1
Inveniosoftware/Invenio-accounts	build passing	coverage 99%	pypi v1.0.0a5
Inveniosoftware/Invenio-admin	build passing	coverage 100%	pypi invalid
Inveniosoftware/Invenio-assets	build passing	coverage 98%	pypi v1.0.0a3
Inveniosoftware/Invenio-base	build passing	coverage 100%	pypi v1.0.0a3
Inveniosoftware/Invenio-celery	build passing	coverage 100%	pypi v1.0.0a2
Inveniosoftware/Invenio-config	build passing	coverage 100%	pypi v1.0.0a1
Inveniosoftware/Invenio-db	build passing	coverage 98%	pypi v1.0.0a6
Inveniosoftware/Invenio-documents	build passing	coverage 100%	pypi v0.1.0.post2
Inveniosoftware/Invenio-l18n	build passing	coverage 97%	pypi v1.0.0a1

Conclusions

- Invenio as an established free digital library software
- rich formats: articles, books, audio, photo, video, data, software
 - institutional repositories: CERN, EPFL, ILO, ...
 - world-wide subject-based repositories: INSPIRE
 - data repositories: CERN, ZENODO, ...
- OAIS-inspired preservation practices
- modular, scalable framework architecture
 - 1 → 2 → 3



<http://inveniosoftware.org/>

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