

# **Hackathon project «Reference data for Anime and Manga: Semantic Linking and Publishing of Diverse Data- Sets»**

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Ontology Summit 2014

# A problem and an answer

- Ontology-based integration of engineering data should be transparent for engineers and to logicians. What does it mean? To understand simultaneously plant models, equipment, P&ID diagrams, and classes, properties and inverse properties, inheritance.
  - Few people know both. Even fewer among them use the same terms for objects they probably share.
  - Engineering datasets come from industrial proprietary CAD systems, ontology tools are open-source university apps.
  - Engineering data is guarded behind corporate firewall, ontology research in public.
- We need non-industrial example of engineering ontology work to test and publicize approaches, method and tools. What can it be?

# Anime and manga production as engineering

- Studio and distribution as **Enabling system** and “anime world” as **System-of-interest** - complexly related.
- Derivative works as Product lines and Custom-tuned models: what is our typical system?
- Complex data with high variety:
  - Texts, video, picture datasets – and relational production and fan datasets.
  - Blurred border between structured and unstructured data (lessons from IBM Watson: ontologies help to answer questions but aren't a primary source of information)

Kill la Kill



Details Reviews

Synopsis

In a high school, Kiryuin Satsuki sword and a super

(Source: Wikipe

Related Anime

Adaptation: Kill la  
Other: Kill la Kill

Characters & V

- Senketsu Main
- Kiryuun, S Main
- Mankansho Main
- Matoi, Ryu Main

- Add to My List
- Add to Favorites
- Edit Anime Information
- Buy @ RightStuf
- Buy from Amazon
- Buy from Japan-Best



Alternative Titles

English: KILL la KILL  
Synonyms: KLK  
Japanese: キルラキル

Information

Type: TV  
Episodes: 24  
Status: Currently Airing  
Aired: Oct 4, 2013 to ?  
Producers: Aniplex, Kadokawa Shoten, Aniplex of America, Trigger  
Genres: Action, Comedy, School  
Duration: 24 min. per episode  
Rating: R - 17+ (violence & profanity)  
L represents licensing company

Statistics

Score: 8.10<sup>1</sup> (scored by 32461 users)  
Ranked: #372<sup>2</sup>  
Popularity: #143  
Members: 98,825  
Favorites: 1,449  
<sup>1</sup> indicates a weighted score  
<sup>2</sup> based on the top anime page

Staff

- Imaishi, Hi Director, Ep
- Tachikawa Episode Dir

Review



Kill la serie the s  
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# The Datasets

**AniDB Statistics**

- 8118 Anime
- 143788 Episodes
- 64297 Characters
- 38989 Creators
- 64654 Songs
- 6164 Collections
- 436 Clubs
- 194 Lexicon Entries
- 126946 Cast Credits
- 536432 Staff Credits

**Newest Reviews**

- 24.02 IS: Infinite Stratos 2
- 21.02 Kuroshitsuji
- 13.02 Machine-Doll wa Kizutsukanai
- 03.02 Kakumeiki Valvrave (2013)

entry edit history forum (5 topics) comments (535 posts) previews (2) reviews (0) customise

**Info** [edit anime] - [add/edit titles] - [add/edit resources]

Info Titles Add To My List My Data Contribution

Main Title	Kill La Kill (#9875)
Official Title	Kill la Kill
Official Title	キルラキル
Type	TV Series, 24 episodes
Year	28.09.2013 till ?
Categories	Action, Comedy, Ecchi, Fantasy, High School, School Life, Seinen, Slapstick, Super Power - [similar]
Resources	Allcinema, ANN, Official page (jp), Schedule, Wiki (en), Wiki (jp), [more]
Rating	7.03 (543) (weighted)
Average	7.81 (566)
Stats	35 eps, 399 files, 24 groups
User stats	2465 members, 535 comments, 16 recs

MAIN CAST	
Yuzuki Ryouka	as Kiryuin Satsuki
Koshimizu Ami	as Matoi Ryuuko
Inada Tetsu	as Gamagoori Ira
Tamura Yukari	as Harime Nui
Yoshino Hiroyuki	as Inumuta Houka
Ueda Yuuji	as Iori Shirou
Shintani Mayumi	as Jakuzure Nonon
Konishi Katsuyuki	as Kinagase Tsumugu

MAIN STAFF	
Original Work:	Trigger, Nakashima Kazuki
Direction:	Imaishi Hiroyuki
Series Composition:	Nakashima Kazuki
Character Design:	Sushio
Chief Animation Direction:	Sushio
Music:	Sawano Hiroyuki
Animation Work:	Trigger

Episode list

All of the episode ti

No.	
1	"If Only I "Azami no

Ryuko Matoi trans  
who wear powerf

father's murder, Ryuko confronts the student council president, Satsuki Kiryuin, saying she is looking for the owner of the other half of a giant scissor blade she wields. She is beaten by the school's boxing club captain, Takaharu Fukuroda, using the power of his Two-Star Goku Uniform. Fleeing to her ruined home nearby and lamenting her defeat, Ryuko is dropped down a trapdoor by her homeroom teacher, Aikuro Mikisugi. She lands in a basement and discovers a living sailor uniform that forcibly puts itself on her. The next day, Takaharu prepares to execute Ryuko's friend and classmate Mako Mankanshoku for treason. Ryuko arrives to rescue her and confront Takaharu again, this time using her new uniform's powers to defeat him and destroy his Goku Uniform. Afterwards, Ryuko questions Satsuki again about the wielder of the other scissor blade, who is allegedly the one who killed her father.

2	"So Sexy She Might Pass Out" "Kizetsu Suru Hodo Nayamashii" (気絶するほど悩ましい)	October 10, 2013
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Ryuko is fatigued after her battle and flees, passing out and ending up in the care of Mako's family. That night, Ryuko recalls how she was introduced to the uniform, which she decides to name Senketsu, who was created by her father, Isshin. The next day, Ryuko comes across the tennis club captain, Omiko

# The Plans

## A) The Reference Data

- Ontology commitments - ISO 15926 4D extensional ontology
- Reference data reuse - to be a part of federated Reference Data Libraries (RDL).
- Use ISO 15926-2 ontology and link to PCA reference data wherever possible: <http://posccaesar.org/endpoint/sparql>.
- Develop domain ontology (classes and templates – n-ary relations) rich enough to map a sensible selection of anime-manga online resources.

## B) The Semantization of Datasets

- Develop patterns for anime-manga semantic data structures (bases on classes and templates of domain RDL).
- Program adapters to access selected datasets and map native data model to developed patterns.
- Run adapters and create semantic data from anime-manga sources in ISO 15926-8 RDF.

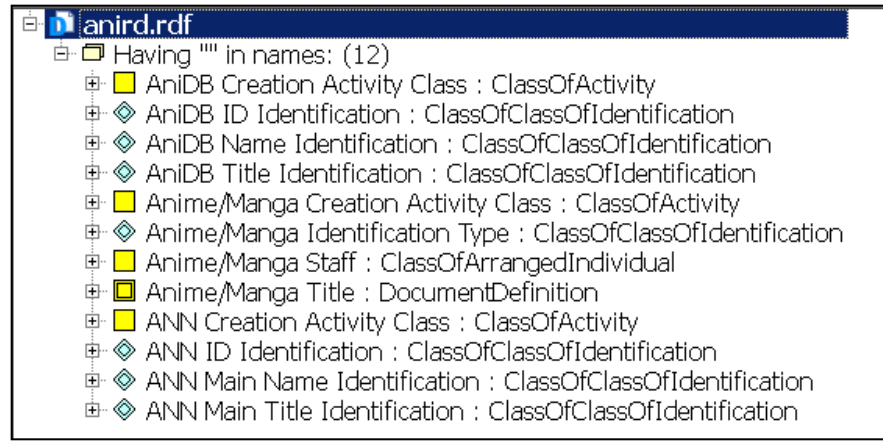
## C) Publish Linked Data

# The Event

- On the 29th of March 2014 12:00 – 20:00 MSK
  - Debug and corrections – 3 more days
- Overall 9 participants and some guests
- Working language - Russian, with occasional use of English
- Environment - .15926 Editor (specially tailored version downloadable from <http://techinvestlab.ru/files/15alpha/dot15926Editor15alpha.rar> )
- Open project repository - <http://github.com/ailev/anird> (initial data sets, reference data, patterns, adapter code and project results)

# The Process

- Data sets to access (APIs and XML exports):
  - <http://www.animenewsnetwork.com/>
  - <http://anidb.net>
- Modeling
  - Alternative identifications – names and internal DB IDs
  - Work division – connecting title, team and roles in an activity
- URI schema
- Reference data development
- Set of patterns to describe native DB models



```
{'name': 'ANNTitle',  
'signature': {'Title': '', 'TitleId': '', 'Year': '' },  
'options': [ {'name': 'main',  
  'parts': [{ 'AMTitle': 'self',  
    'uri': 'http://anird.techinvestlab.ru/rdl/id83475f51-fcb0-48cf-ab80' },  
    { 'ANNMainTitle': 'self',  
      'uri': 'http://anird.techinvestlab.ru/rdl/id602498b4-5737-4ee4'},  
    { 'ANNID': 'self',  
      'uri': 'http://anird.techinvestlab.ru/rdl/idbc8794fd-3091-4ca9-8af'},  
    { 'Anime': 'self',  
      'TitleId': 'annDataBaselD',  
      'type': 'http://rds.posccaesar.org/2008/02/OWL/ISO-15926-  
2_2003#ClassOfInformationObject',  
      'Year': 'annYearAired',  
      'Title': 'label', },  
    { 'type': p7tpl.Classification,  
      'Anime': 'hasClassified',  
      'AMTitle': 'hasClassifier' },  
    { 'type': p7tpl.ClassifiedIdentification,  
      'Anime': 'hasObject',  
      'Title': 'valIdentifier',  
      'ANNMainTitle': 'hasContext' },  
    { 'type': p7tpl.ClassifiedIdentification,  
      'Anime': 'hasObject',  
      'TitleId': 'valIdentifier',  
      'ANNID': 'hasContext' }, ] ] ] }
```

# The Results (1)

anidb\_titles\_new.rdf

Search in names

- anidb\_titles\_new.rdf
  - Having "" in names: (8159)
    - First Kiss Story; Kiss kara Hajimaru Monogatari : ClassOfInformationC
    - Love Get Chu: Miracle Seiyuu Hakusho : ClassOfInformationObject
    - Neko no Sumu Shima : ClassOfInformationObject
    - Sekai Meisaku Gekijou Kanketsu Ban: Flanders no Inu : ClassOfInform
    - Sugar Sugar Rune : ClassOfInformationObject
    - Jin Sheng Yuan : ClassOfInformationObject
    - Sekai Meisaku Gekijou Kanketsu Ban: Wakakusa Monogatari: Nan to J
    - Washimo : ClassOfInformationObject
    - Pussycat : ClassOfInformationObject
    - Tamako Love Story : ClassOfInformationObject
    - GJ-bu 2 : ClassOfInformationObject
    - Mitsu x Mitsu Drops : ClassOfInformationObject
    - Gold Lightan : ClassOfInformationObject
    - Saraba Uchuu Senkan Yamato: Ai no Senshi-tachi : ClassOfInformati
    - Fake : ClassOfInformationObject**
    - Sentou Yousei Yukikaze : ClassOfInformationObject

ann\_titles\_and\_staff.rdf

Search in names

- ann\_titles\_and\_staff.rdf
  - Found: (6941)
    - Sugar Bunnies : ClassOfInformationObject
    - Bihada Ichizoku : ClassOfInformationObject
    - Saint Seiya: Legend of Sanctuary : ClassOfInformationObject
    - Papa Love : ClassOfInformationObject
    - Keraku-no-Oh - King of Pleasure : ClassOfInformationObject
    - G-9 : ClassOfInformationObject
    - Soreike! Anpanman: Roll to Lola Ukigumo Shiro no Himitsu : ClassOfI
    - Dame Oyaji : ClassOfInformationObject
    - Eldran : ClassOfInformationObject
    - Doraemon: Nobita's South Sea Adventure : ClassOfInformationObject
    - Mobile Suit Gundam: Char's Counterattack : ClassOfInformationObject
    - Yoiko : ClassOfInformationObject
    - Cannon Fodder : ClassOfInformationObject
    - Gakkō ga Kowai! Inuki Kanako Zekkyō Collection : ClassOfInformationC
    - Sexual Pursuit : ClassOfInformationObject
    - Cuplingo: Girl: II Teatime : ClassOfInformationObject

anidb\_titles\_new.rdf

- Fake : ClassOfInformationObject
  - Properties (3)
  - Relationships (8)
    - hasClassified for <http://anird.techinvestlab.ru/rdl/id4382>
      - Properties (4)
        - hasContext = main : ClassOfClassOfIdentification
        - hasObject = Fake : ClassOfInformationObject
        - rdf:type = ClassifiedIdentification
          - valIdentifier = "Fake"
      - Relationships (0)
      - Patterns (0)
    - hasObject for <http://anird.techinvestlab.ru/rdl/id34408a>
      - Properties (4)
        - hasContext = official : ClassOfClassOfIdentification
        - hasObject = Fake : ClassOfInformationObject
        - rdf:type = ClassifiedIdentification
          - valIdentifier = "Подделка"
      - Relationships (0)
      - Patterns (0)
    - hasObject for <http://anird.techinvestlab.ru/rdl/id84320c>
      - Properties (4)
        - hasContext = syn : ClassOfClassOfIdentification
        - hasObject = Fake : ClassOfInformationObject
        - rdf:type = ClassifiedIdentification
          - valIdentifier = "مزيف"
      - Relationships (0)
      - Patterns (0)
    - hasObject for <http://anird.techinvestlab.ru/rdl/idfd6a967>
      - Patterns (1)



# The Results (2)

ann\_titles\_and\_staff.rdf

Search in names

Found: (2554)

- ⊕ Kazuhiko Soma : ActualIndividual
- ⊕ Kiyoshi Murakami : ActualIndividual
- ⊕ Hiroyuki Saida : ActualIndividual
- ⊕ Masatoshi Ishizuka : ActualIndividual
- ⊕ Takahisa Inoue : ActualIndividual
- ⊕ Toyohiro Andô : ActualIndividual
- ⊕ Susumu Takahisa : ActualIndividual
- ⊕ Tetsuji Higuchi : ActualIndividual
- ⊕ Takahiro Kagami : ActualIndividual
- ⊕ Junko Matsushita : ActualIndividual
- ⊕ Naomi Ide : ActualIndividual
- ⊕ Takuzō Nagano : ActualIndividual
- ⊕ Kazuhisa Ishii : ActualIndividual
- ⊕ Kou Matsuo : ActualIndividual
- ⊕ Kenji Yokoo : ActualIndividual
- ⊕ Shinkichi Mitsumune : ActualIndividual
- ⊕ Kazuhiko Ishii : ActualIndividual
- ⊕ Satoshi Ishino : ActualIndividual
- ⊕ Kōnosuke Yoshihara : ActualIndividual
- ⊕ Jirou Kouno : ActualIndividual
- ⊕ Maro Ijūin : ActualIndividual
- ⊕ Etsuji Yamada : ActualIndividual
- ⊕ Noboru Mitsusawa : ActualIndividual
- ⊕ Hideki Taniuchi : ActualIndividual
- ⊕ Kouichi Sugitani : ActualIndividual
- ⊕ Takahiro Kimura : ActualIndividual
- ⊕ Haruhiko Mikimoto : ActualIndividual
- ⊕ Tadahiko Inagawa : ActualIndividual

- ⊕ Takahisa Inoue : ActualIndividual
  - ⊕ Properties (3)
  - ⊕ Relationships (6)
    - ⊕ hasClassified for <http://anird.techinvestlab.ru/rdl/id46cf9>
    - ⊕ hasObject for <http://anird.techinvestlab.ru/rdl/id4f8486c>
    - ⊕ hasObject for <http://anird.techinvestlab.ru/rdl/idb4e64e1>
    - ⊕ hasPart for <http://anird.techinvestlab.ru/rdl/id3fa3677d1>
      - ⊕ Properties (3)
        - ⊕ hasPart = Takahisa Inoue : ActualIndividual
        - ⊕ hasWhole = <http://anird.techinvestlab.ru/rdl/id760>
          - ⊕ Properties (1)
          - ⊕ Relationships (3)
            - ⊕ hasClassified for <http://anird.techinvestlab.ru/>
            - ⊕ hasInvolver for <http://anird.techinvestlab.ru/>
              - ⊕ Properties (3)
                - ⊕ hasInvolved = Calimero : ClassOfInforr
                - ⊕ hasInvolver = <http://anird.techinvestlab.ru/>
                - ⊕ rdf:type = InvolvementByReference
              - ⊕ Relationships (0)
            - ⊕ hasWhole for <http://anird.techinvestlab.ru/rdl/id760>
    - ⊕ rdf:type = CompositionOfIndividual

# Further plans?

- Not enough time to complete Linked Data presentation of the results
  - Look for Linked Data engine in the new release of .5926 Editor
- Integration of two data sources not complete
- Shortcomings and bugs in .15926 Editor pattern mapping engine discovered
  - Look for enhances mapping engine in the new release
- All are welcome to test our environment - changing, augmenting or completing the project

# Thank you!

Team lead: Victor Agroskin, [vic5784@gmail.com](mailto:vic5784@gmail.com)

TechInvestLab.ru

.15926 Editor freeware:

<http://techinvestlab.ru/dot15926Editor>

(documentation:

<http://techinvestlab.ru/15926EditorDocumentation>)

