

Re-engineering DNA Surveillance

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Outline

- 1 About DNA Surveillance
- 2 Motivation and Aims
- 3 Tasks
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About DNA Surveillance

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- A species identification tool
- using phylogenetic methods
- available on the internet.

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Statistical Support

- Bootstrapping

Motivation and Aims

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- No sources available.
- Current system can not be maintained.

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- Usability
- Flexibility
- Modularity

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- **Modularity**

Tasks

Modules

- Database Schema
- WebApp for Reference Alignment Setup
- Option for auto-generating DNA Surveillance Instances
- WebApp for Users
- Phylogenetics Server

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Preceding Work

Re-engineering started by Waltraud Sichart in 2009

Tasks

Modules

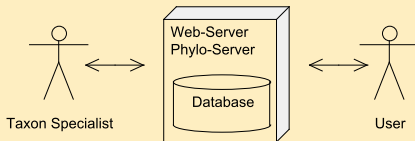
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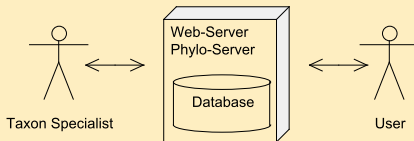
Architecture

Current DNA Surveillance

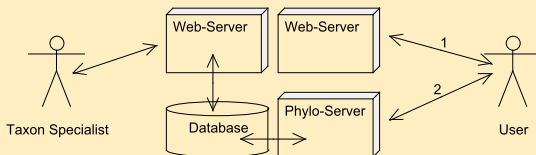


Architecture

Current DNA Surveillance



New version



The New User Interface

WebApp for Reference Alignment Setup



DNA Surveillance Administration

Species identification with DNA

Control

Home
Contact
Add User or Database

Database

Domain groups
Domains
Species
Specimens
Genes
Reference alignments

DNA Surveillance

Create DNAS instance
Manage existing instances

Layout

Look and feel (Admin)

Log out

Current reference alignments

alignmentLongName	groupName	geneName	distanceModel	visibility	outgroup
<input type="radio"/> ref2253	PNG1	Control Region 1	HKY	public	Mus052
<input checked="" type="radio"/> ratFile	PNG1	Control Region 1	FB4	not public	Mus052
<input type="radio"/> xxx	PNG1	Control Region 1	Jukes Cantor	not public	Mus052
<input type="radio"/> fl0b4r	PNG1	Control Region 1	Jukes Cantor	not public	Mus052
<input type="radio"/> testup3	PNG2	Control Region 1	HKY	not public	

Options

The New User Interface

User Input Environment

Enter a Sequence:

OR choose a file for processing a bunch of sequences:

Please select a reference alignment:

COI Barcode region

Bootstrap replicates: **with threshold**

Required:

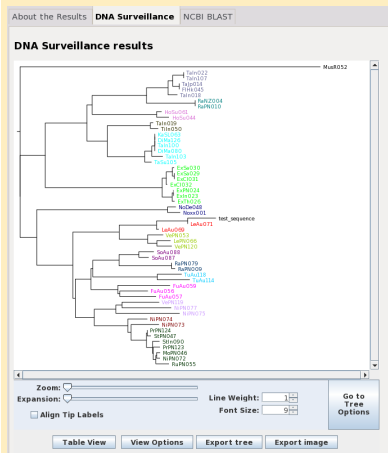
- Reference Alignment
- Unknown Sequence
- or File of Sequences

Optional:

- Bootstrap Analysis

The New User Interface

Output:



Results:

- Phylogenetic Tree
- Distance Matrix
- BS-Results

In addition:

- BLAST-Result

Conclusion

In a nutshell. . .

New DNA Surveillance

- consists of modules
- provides extended functionality and
- is maintainable

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Open Tasks

- More Tests (+ Bugfixing)
- Final Release
- ...

That's it!

Thank you for your attention!

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Questions?