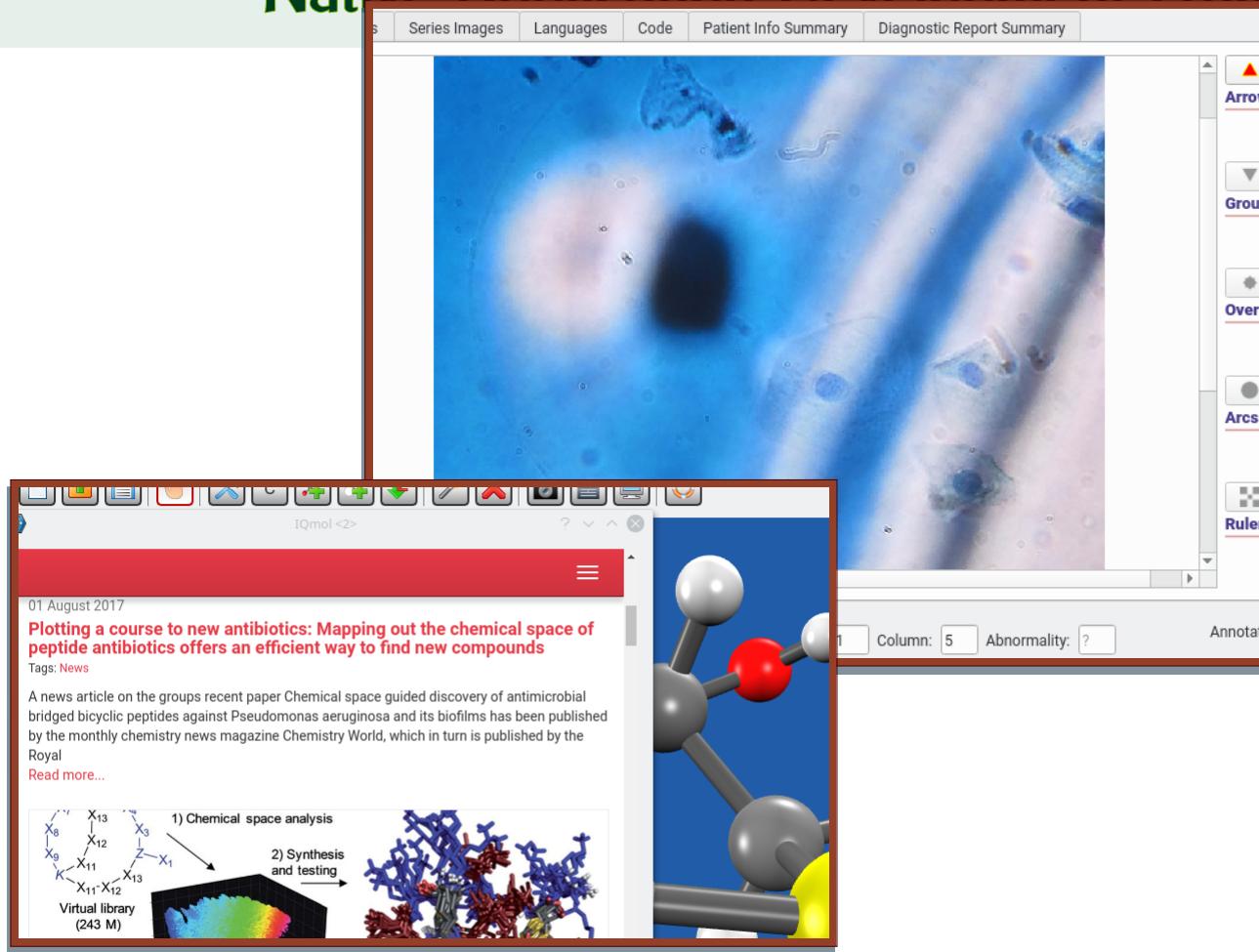


The NCN/A3R ("NA3")

Native Application Development Framework



Linguistic Technology Systems
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Founder and CEO
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The NCN (Native Cloud/Native) Protocol

Cloud/Native Components as back-ends for native software

- “Native Cloud/Native” refers to native application front-ends paired with Cloud/Native container instances.
- Share code libraries and data representation across both endpoints.
- Common representation on both server- and client-side streamlines network communications (no need to marshal data between different formats).
- This presentation will focus on NA3’s default Qt implementation, though the technology can be ported to other application frameworks (wxWidgets, XCode, MFC, etc.).

How Cloud Back-Ends Enhance Native Front Ends

- Cloud Backup; Share data between users; Collaborative Editing
- Persist users’ application state across different computers (home/school/office)
- Upgrade running applications without re-compile

Application-As-A-Resource (A3R)

The A3R Application Model

- A3R Applications are self-contained, citable resources which can conform to modern resource documentation standards, such as the Research Object protocol.
- A3R Applications can use Hypergraph-structured metadata to describe data types, procedures, User Interface features, and inter-type relationships (for instance, the relation between data types and the types of GUI components which visualize them).

A3R Developer Tools

- Hypergraph-based data modeling and serialization.
- Framework for building custom scripting, parsing, and data persistence engines.
- Enhanced support for applications specifically designed to access research data sets.
- Convenient framework for sharing data among applications (to establish inter-application workflows) or between applications and cloud or web services (including leveraging NCN services).

The Qt Ecosystem

Qt is the most popular native, cross-platform application-development framework.

- ◆ ~1 million active developers ◆ Over 5,000 client companies ◆ Worldwide “Qt Partners” Ecosystem ◆ ~US \$250 million overall market

However ... Limited Qt Cloud Integration Support

- “Qt Cloud Services” Discontinued in 2016.
- Currently there is no standard model for accessing Cloud services from Qt applications.
- Nor is there a standard Qt-based Cloud Native container architecture.

Example Use-Cases

Inter-Application Networking and Workflow Management

- Export data and instructions between Qt-based applications (slides e-e).
- Embed document or multi-media viewers inside scientific or dataset applications (slides e-e).

Responsive, desktop-style applications for enhanced UX

- Compelling front-ends for e-commerce, Real Estate, VR, etc. (slides e-e).
- Native applications offer superior User Experience, leveraging distinct interactive features of desktop GUIs: context menus, dialog boxes, tool tips, Multiple Window Display, dock windows, etc.
- For scientists and researchers, build innovative data-collection instruments as well as interactive Research Object applications (slides e-e).

Interactive VR: Hyperlinked Tag Posts

Panorama-Photography-based VR engines, like Materport, allow “tag posts” with embedded hyperlinks, which in a native-application context become channels of communication between the VR renderer and the host application.

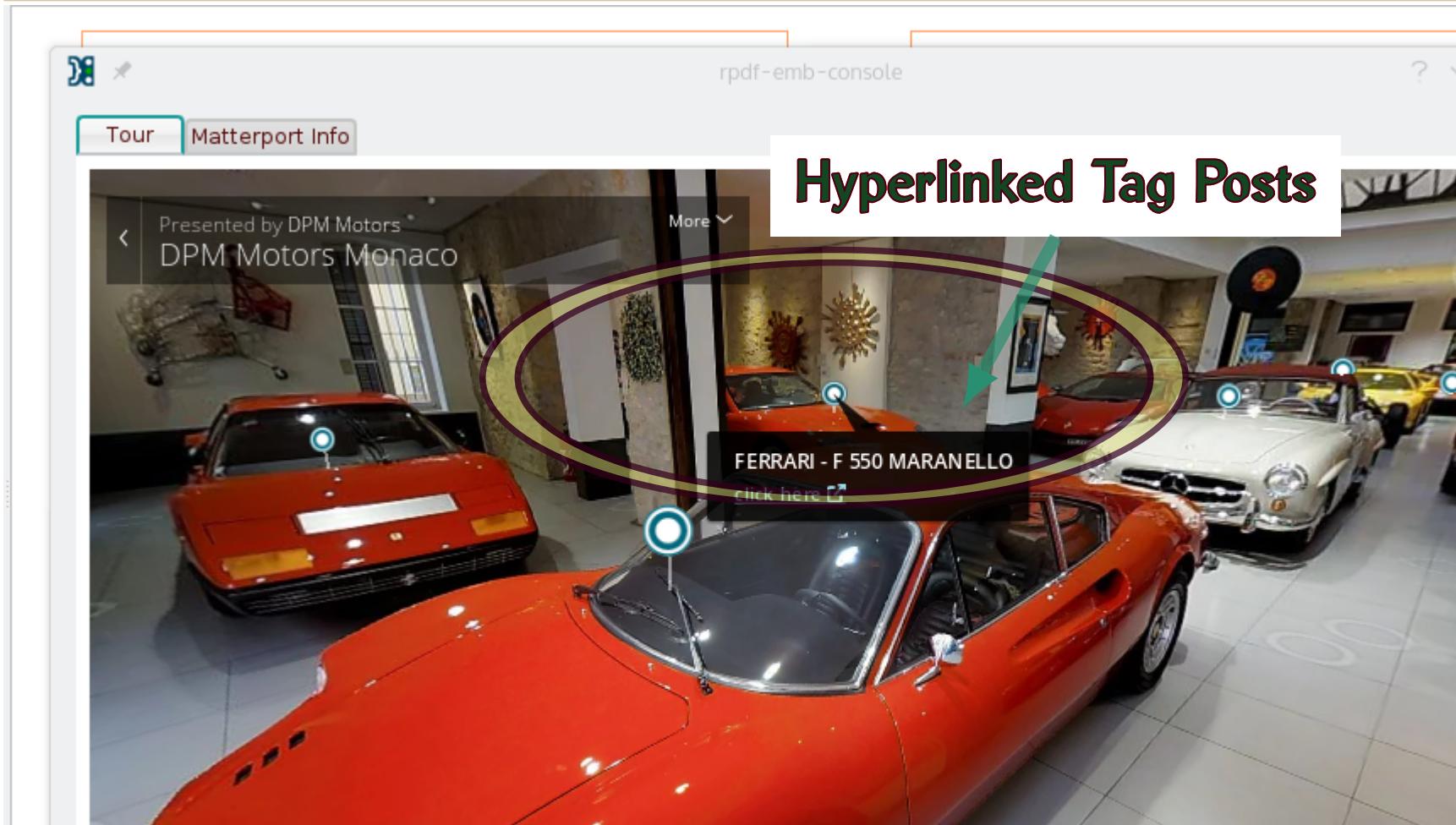


Photo Viewer Color Coding

The Photo Viewer would access embedded data structures which specify how photos are grouped into categories, such as different kinds of rooms (entrance/foyer/hall, kitchen/dining room, bedroom, etc.). Colors are assigned to each group, with color thumbnail used as visual cues marking each photo's classification. Realtors can modify the group names and their corresponding colors, according to their own preferences.

The screenshot shows a photo viewer interface titled "rpdf-emb-console". On the left, there is a grid of small thumbnail images representing various rooms. An arrow points from the "Entrance/Foyer/Hall" entry in the "Groupings" list below to the thumbnail of a hallway in the grid. The "Groupings" list contains the following entries:

- Entrance/Foyer/Hall
- Kitchen/Dining Room
- Living Room/Den
- Bath/Powder Room
- Bedroom/Closet
- Master Bedroom/Spa
- Basement/Game Room

The main right panel displays a large, detailed image of a bedroom. The room features a large wooden bed with a headboard, a matching wooden dresser, a chaise lounge, and a pool table. The walls are painted green, and there are windows with valances. A text overlay in the bottom left corner of the main image area says "Current Photo". At the bottom of the screen, there are navigation buttons (left and right arrows), an item counter (Item: 19), an image zoom slider, and two buttons labeled "OK" and "Cancel".

Photo Viewer Interactive Cues

Color insertions switch from horizontal to vertical indicating which photos have been viewed (enlarged). Separate and apart from that, the thumbnail of the current enlarged photo is marked with a thick colored border. This border will surround the thumbnail and the overlay both for photos being viewed for the first time (with a horizontal color-band) and for photos being viewed a second time (with a vertical color-band).

Already Viewed (vertical color band)

Not Yet Viewed (horizontal color band)

Current Photo (viewed for the second time)

/home/nlevisrael/

Groupings

- Entrance/Foyer/Hall
- Kitchen/Dining Room
- Living Room/Den
- Bath/Powder Room
- Bedroom/Closet
- Master Bedroom/Spa
- Basement/Game Room

Item: 10

Image Zoom:

Photo Viewer Alternative Interface

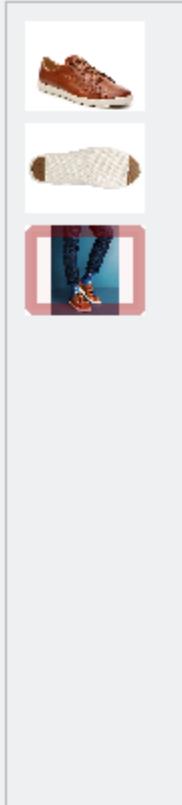
For realtors who prefer showing/hiding thumbnails (as opposed to using color-coding to differentiate groups), the Photo Viewer can also be implemented with this alternative design, or the two designs can be combined. In general, realtors will be afforded a lot of control over the layout and operational design of Re-PDF interactive windows.

The screenshot displays a photo viewer interface with the following components:

- Thumbnail Grid:** A 5x3 grid of small thumbnail images representing different rooms of a house.
- Visible Groups:** A large image of a living room with beige couches, a glass coffee table, and a painting on the wall. This image is labeled "Visible Groups".
- Hidden Groups:** A large image of a kitchen area with a white cabinet and a window. This image is labeled "Hidden Groups".
- Groupings List:** A vertical list of room categories with checkboxes:
 - Entrance/Foyer/Hall (highlighted with a green oval)
 - Kitchen/Dining Room
 - Living Room/Den
 - Bath/Powder Room
 - Bedroom/Closet
 - Master Bedroom/Spa
 - Basement/Game Room (highlighted with a red oval)
- Navigation:** Buttons for navigating between items (left arrow, right arrow), an item counter (Item: 3), and an image zoom slider.
- Buttons:** OK and Cancel buttons at the bottom right.

Arrows point from the text labels "Visible Groups" and "Hidden Groups" to their respective large images in the viewer.

ECI.



ECI

- Detach Image
- Detach Noteboook
- Detach Description
- [Detach Everything](#)
- Merge Windows
- Explore Color Matches ...
- View 3D Model ...
- Take Screenshot
- View Item List
- View Shopping Cart



Item: 3 Image Zoom:

[Overview](#) [Features](#) [Specs](#) [Reviews](#)

- Leather upper

Grand Cros

Sleek and s
Crosscourt
Haan is the
some tailor
your every

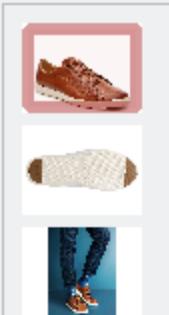
Actions:

- [Add to...](#)
- [Explor...](#)



EC-2

EC2.



EC2

[Overview](#) [Features](#) [Specs](#) [Reviews](#)

Details

Colors: White, Cognac, Navy, Black

Item # 394637

UPC # 190595368293

[Detach Image](#)

[Detach Noteboook](#)

[Detach Description](#)

[Detach Everything](#)

[Merge Windows](#)

[Explore Color Matches ...](#)

[View 3D Model ...](#)

[Take Screenshot](#)

[View Item List](#)

[View Shopping Cart](#)

Grand Crosscou

Sleek and simple
Crosscourt II sneaker
Cole Haan is the
to add some tail
style to your eve

Actions:

- [Add to Cart](#)
- [Explore Colors](#)



EC-3

EC3.

Product

Coordinate

Select Color

Hue

Sat

Value

Red

Green

Blue

EC3

Reset

Pick

OK

Apply

Cancel

Hex: #522a26

Overview Features Specs Reviews

Details

EC-4

EC4.

File Email Events APIs Web Broadleaf

Page: 0

Search for:



Document: 100%



tecs-db-main <2>

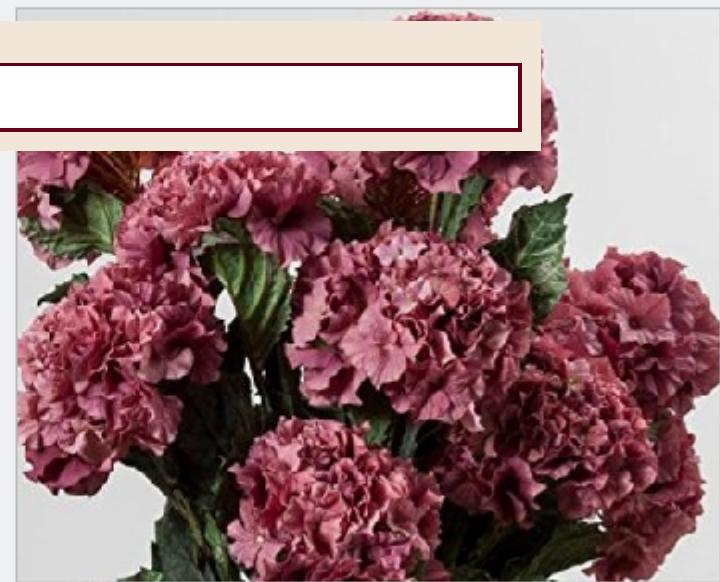
?



tecs-db-main <3>

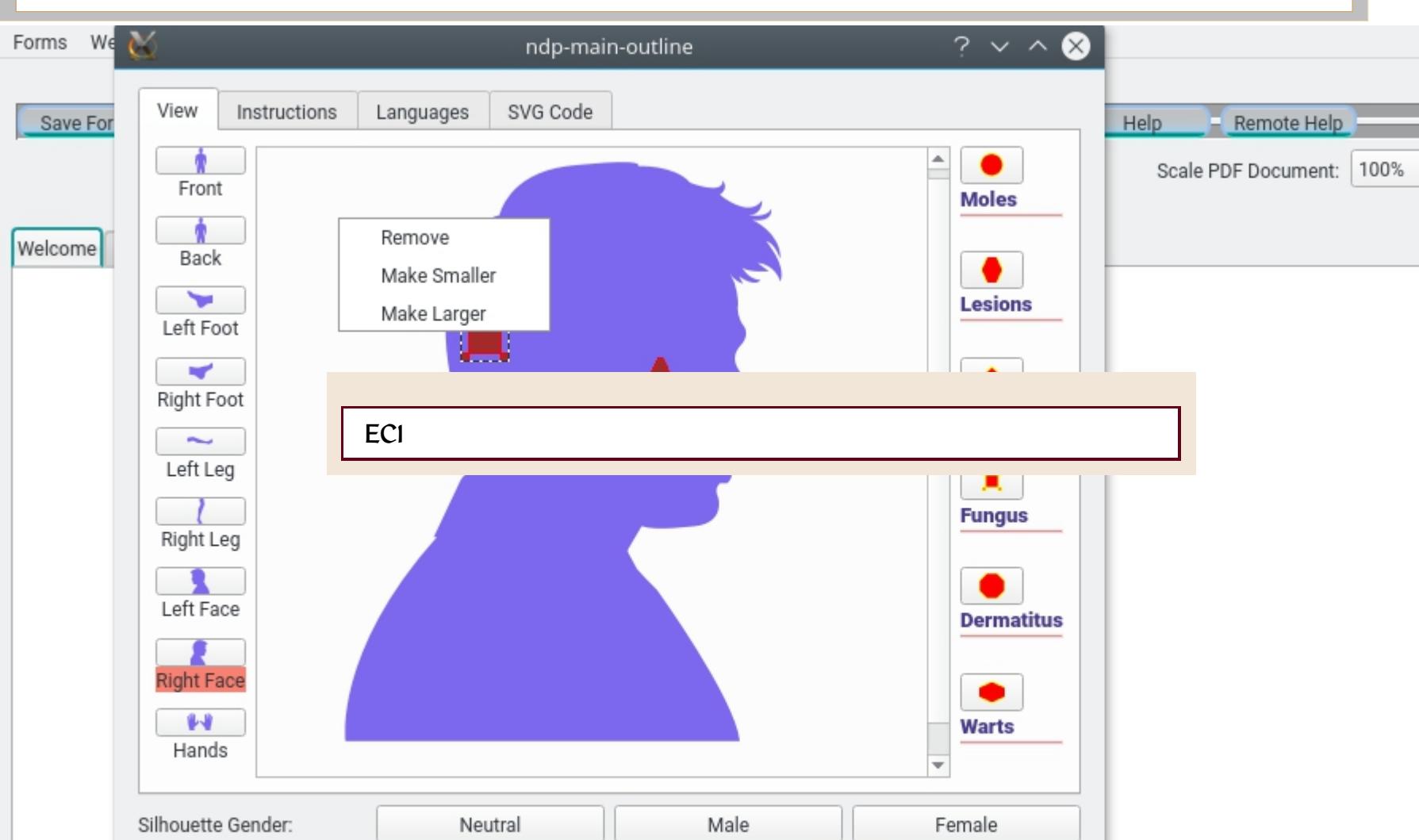
Lily Garden Silk
Peony Bouquet
Home Decoration,
Lilac, 18 Inches
High

EC4



EC-I

ECI.



EC-I

ECI.

Forms Web Language Help About

Save Form

Open Form

Cloud Save

Cloud Open

Submit Form

Share Form

Help

Remote Help

Page: 0

Search for:

Forwards

Find

Clear

Scale PDF Document:

100%

Welcome Web

X ? ^ ^ X

Form Outline

Click on a subheading to continue

Patient Information

Chief Complaint

Review of Symptoms

Treatment History

Medical History

Current Medications

Family History

ECI

Chief Complaint (reason for your visit today) Edit

Does this pain radiate? If so where? Edit

Please list any additional areas of pain Edit

Open Diagram Diagram This opens a diagram so you can mark areas of pain Close

ECI.

Patient Info Dialog

Diagnostic Report

Open Folder

Open Image

View

Instructions

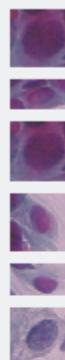
Series Images

Languages

Code

Patient Info Summary

Diagnostic Report Summary



Silhouette Zoom:

< >

Image and Group Transforms ...

Single Annotation Transforms ...

EC-I

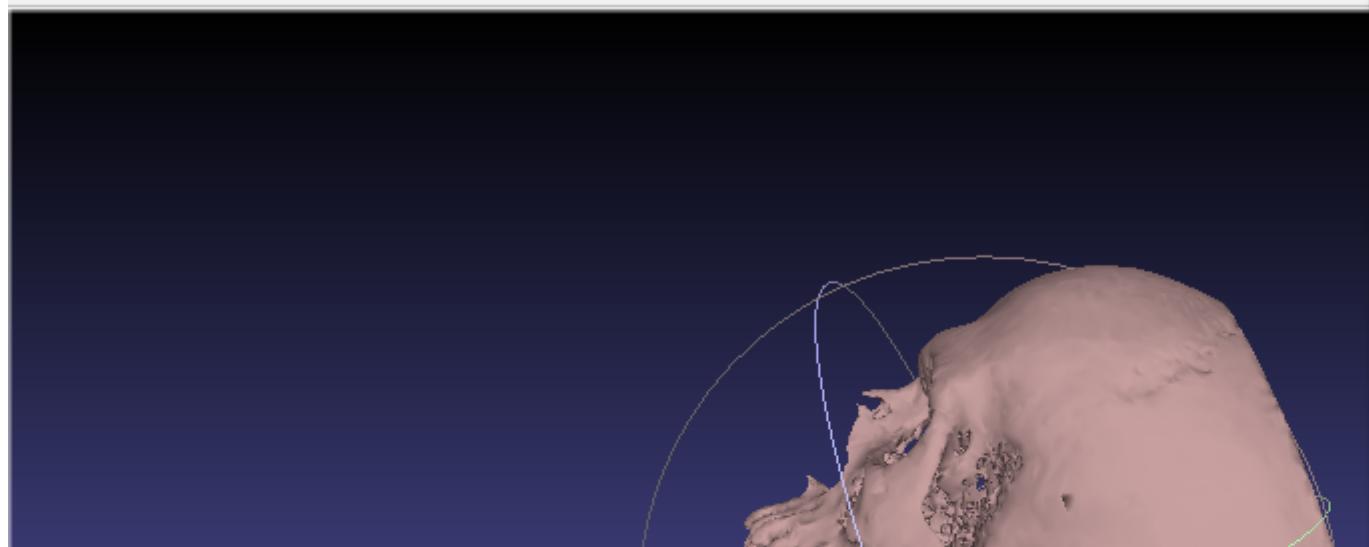
ECI.

File Edit Filters Render View Windows Tools Help



3DimViewer - /ext_r

File Edit View Filtering Model

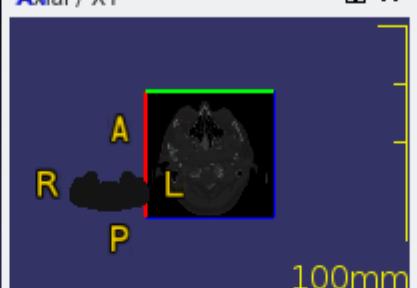


3DimViewer - /ext_r

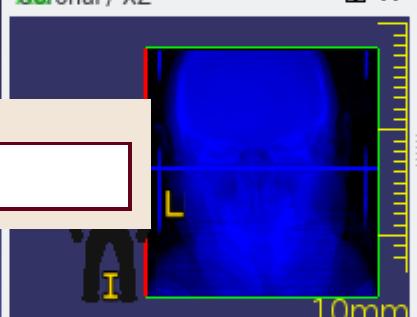
File Edit View Filtering Model



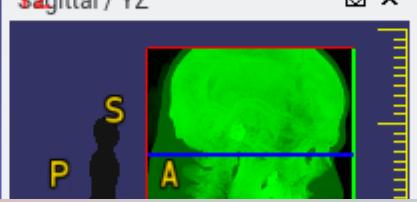
AXial / XY



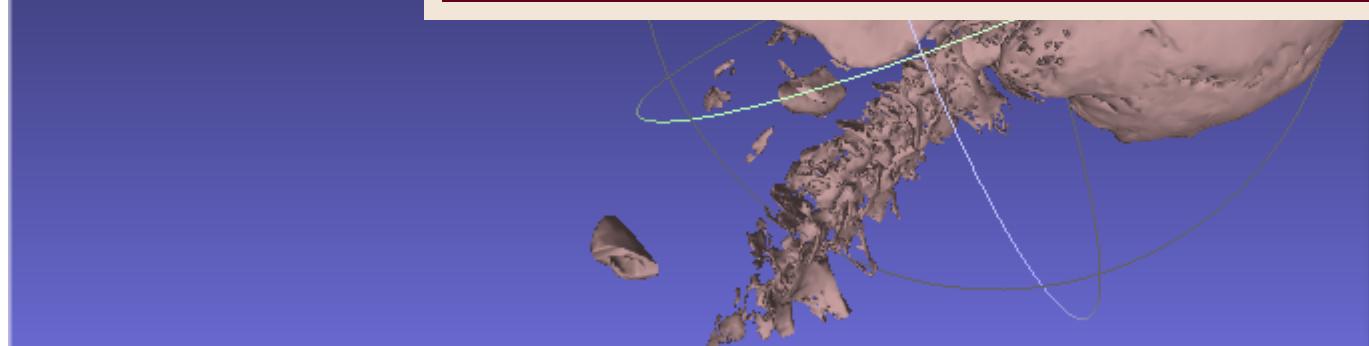
Coronal / XZ



Sagittal / YZ

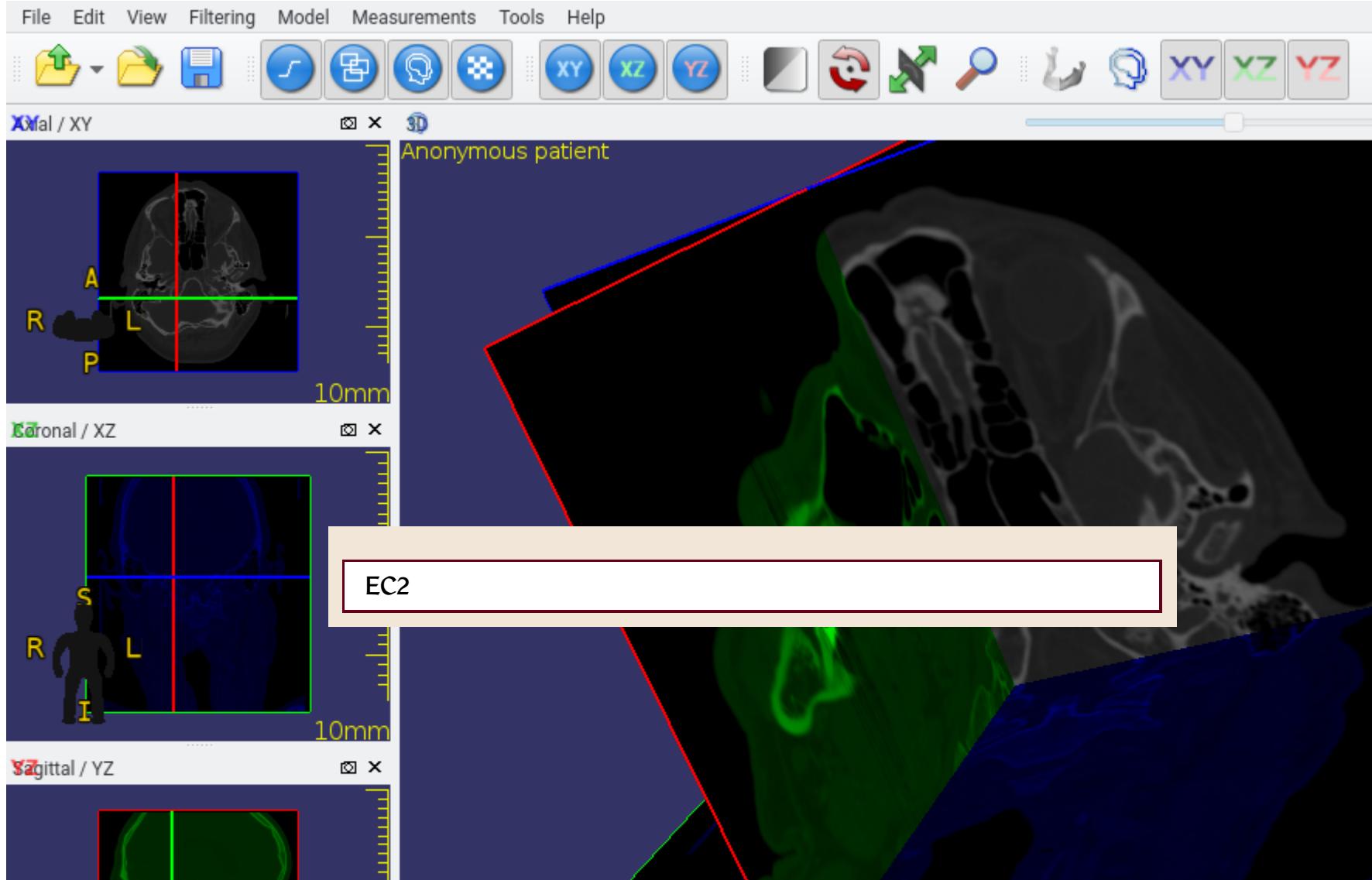


ECI



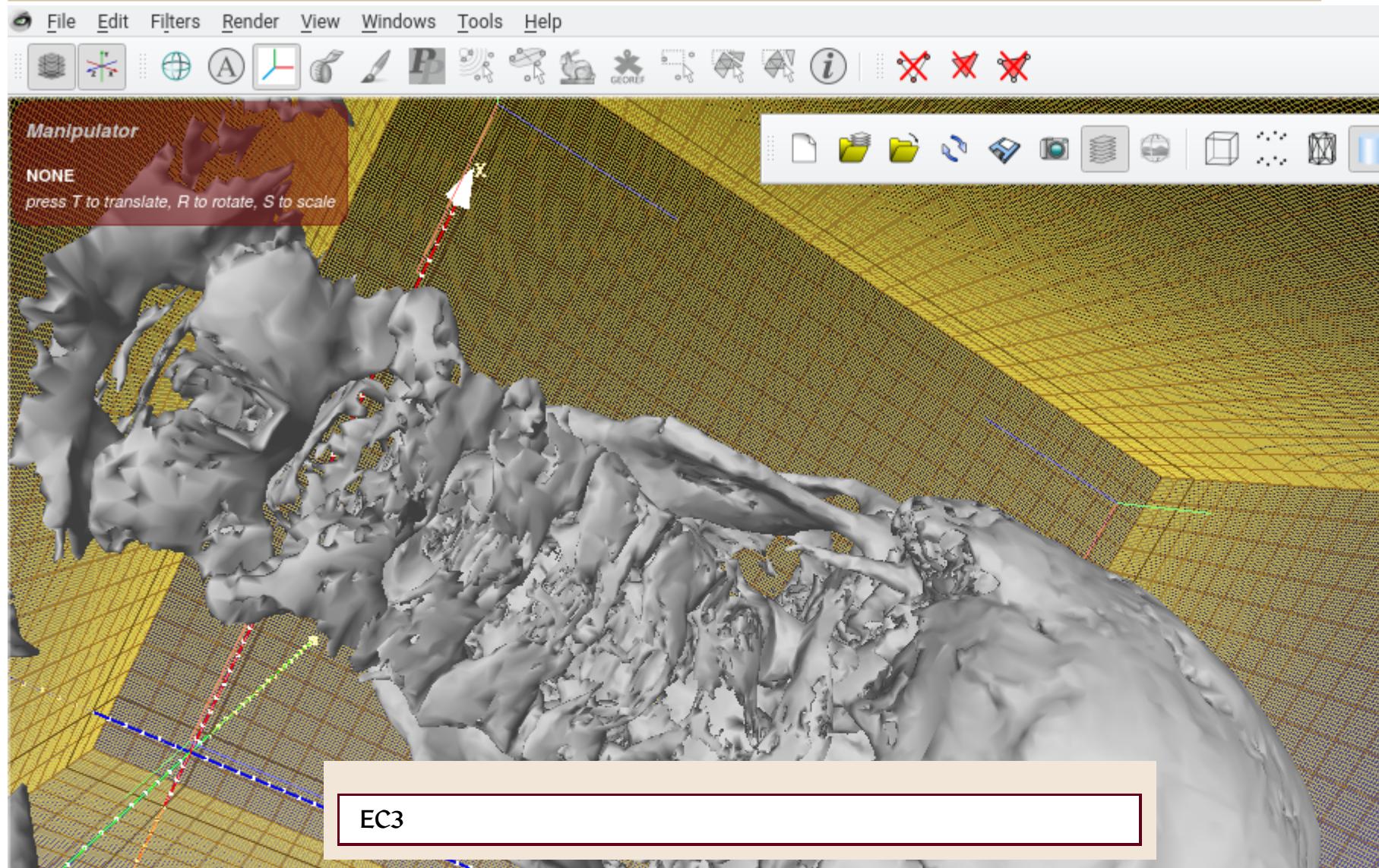
EC-2

EC2.



EC-3

EC3.



ECI.

File Edit Display Build Calculation SONIC Help



Model View

▶ Global

▶ L-cysteine

Configure

Select All

Reperceive Bonds

Duplicate Geometry

Atomic Charges

Remove

SONIC

SONIC Reader

Springer Keyword Search: Cysteine

Springer Web Search Home



Refine Search

Show...

CONTENT TYPE	
Book	157

TOPICS	
Biochemi	strv

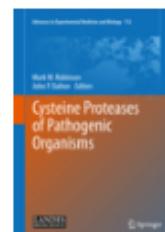
37

Book

Cysteine Proteases of Pathogenic Organisms

Robinson, M. W. (Ed), Dalton, J. P. (Ed) (2011)

Cysteine proteases expressed by pathogenic organisms play key roles in virulence including host



EC-2

EC2.



Open Book Book Info Preferences Library Reading

PDF **HTML** NAV HTML Source Lisp CSS XML

Go to old article view

PDF  

ANTHROPOLOGY AND HUMANISM

Articles

EC2

The Ethnographer as Apprentice: Embodying Sociomusical Knowledge in South India

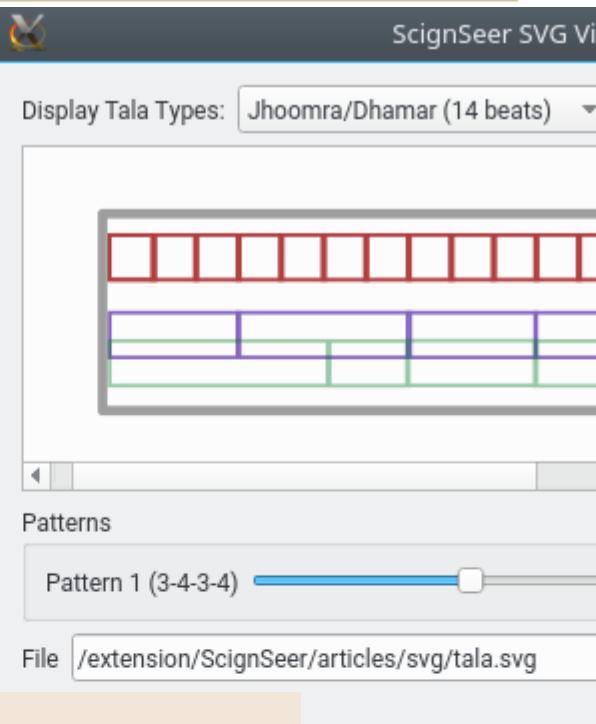
Amanda Weidman

First published: 26 December 2012 Full publication history

DOI: 10.1111/j.1548-1409.2012.01131.x View/Download citation

ScignSeer SVG View

Display Tala Types: Jhoomra/Dhamar (14 beats)



Patterns

Pattern 1 (3-4-3-4)

File /extension/ScignSeer/articles/svg/tala.svg

Volume 3
December
Pages 2

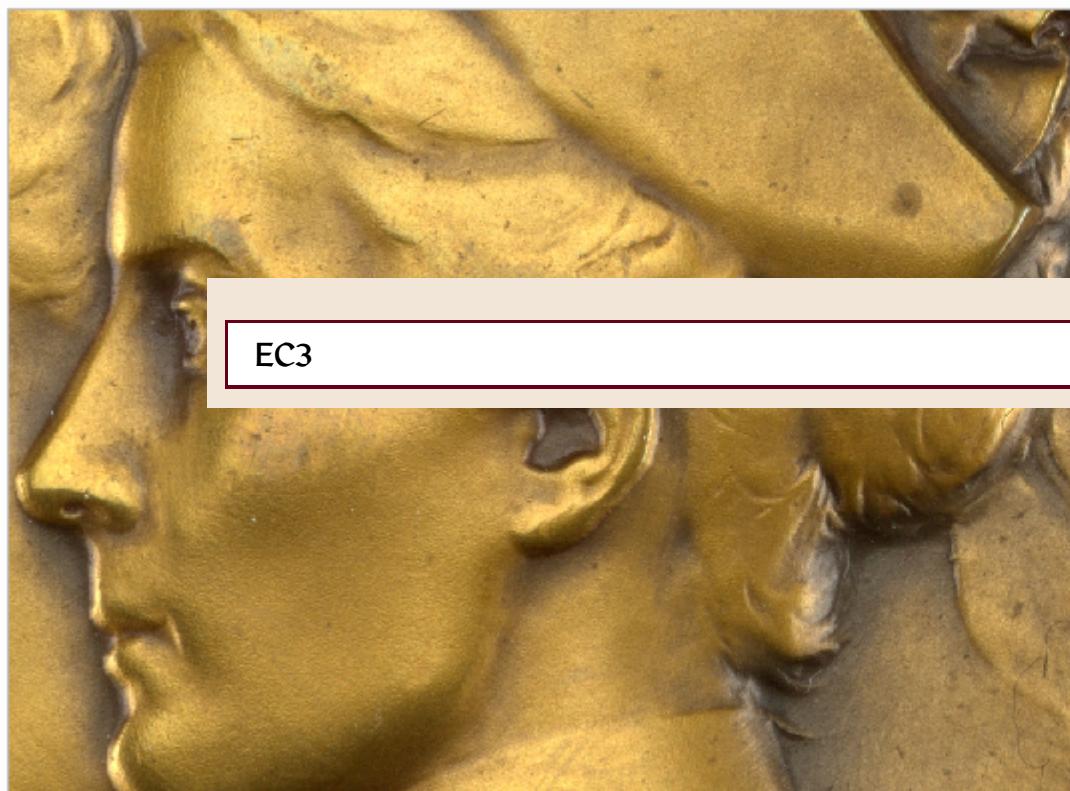
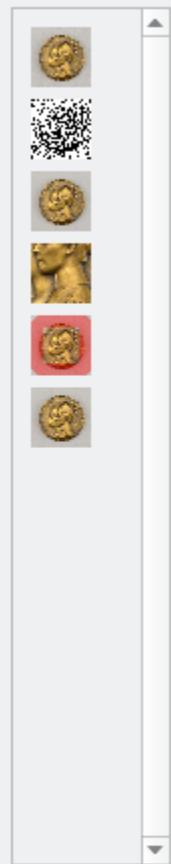


February 2, 2020

21 / 25

EC-3

EC3.



[View](#) [Instructions](#)



Row:

0

Column:

0

MEDAL

 Click the icon to save

This is a **Medal**. We acquired

of the **Product D** department.

Cite this object as

Medal; bronze; 1920-3

EC-4

EC4.

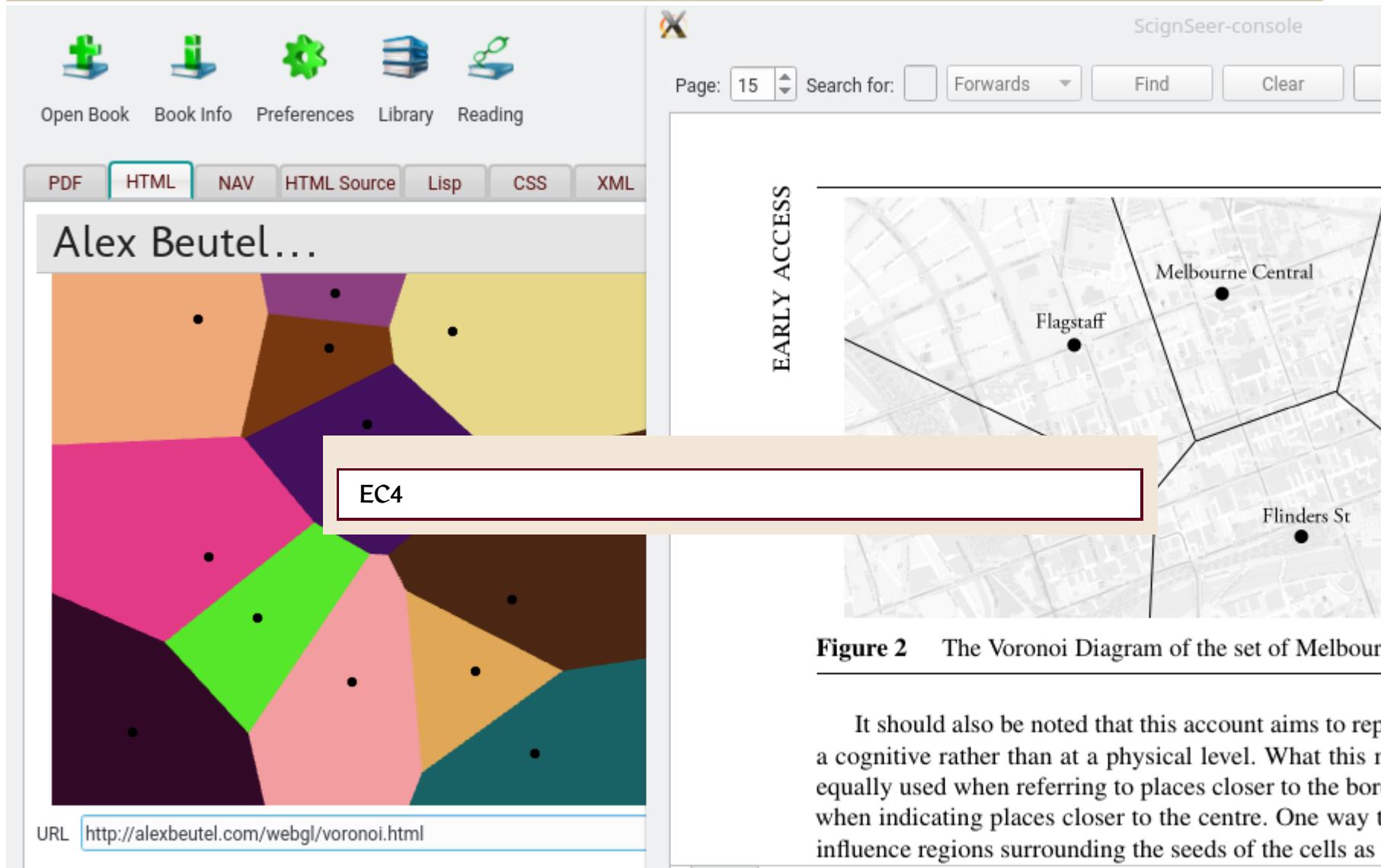


Figure 2 The Voronoi Diagram of the set of Melbourne

It should also be noted that this account aims to represent a cognitive rather than a physical level. What this means is that the term "nearby" is equally used when referring to places closer to the borders of a region as well as when indicating places closer to the centre. One way to do this is to influence regions surrounding the seeds of the cells as follows:

EC-4

EC4.



Open Book



Book Info



Preferences



Library



Reading

PDF

HTML

NAV

HTML Source

Lisp

CSS

XML



**RED PANDA
NETWORK**

Ailurus fulgens styani (also known as *a. f. refulgens*): Only found in China (in the Hengduan Mountains in Sichuan and the East Nujiang River of Yunnan Province) and northern Myanmar.

WHAT WE DO

RED PANDA

GET INVOLVED

CONTRIBUT

Mountains in Sichuan and the East Nujiang River of Yunnan Province) and northern Myanmar.

The head and body length of red pandas averages 56 to 63 cm (22 to 25 in), and their tails about 37 to 47 cm (15 to 19 in).

Behaviors



ScignSeer Video Player

Red p

EC4

develop extended associations with their mothers that last through the breeding season.



In terms of t
tend to have
other. This n



Thanks!

Please contact Linguistic Technology Systems for more information about NA3 or other Software Language Engineering solutions.

