



USER MANUAL

November 2018

Version 1



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University of
Denmark



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Recommended format for purposes of citation:

ICES. 2018. SmartDots User manual. 11pp. <https://doi.org/10.17895/ices.pub.7541>

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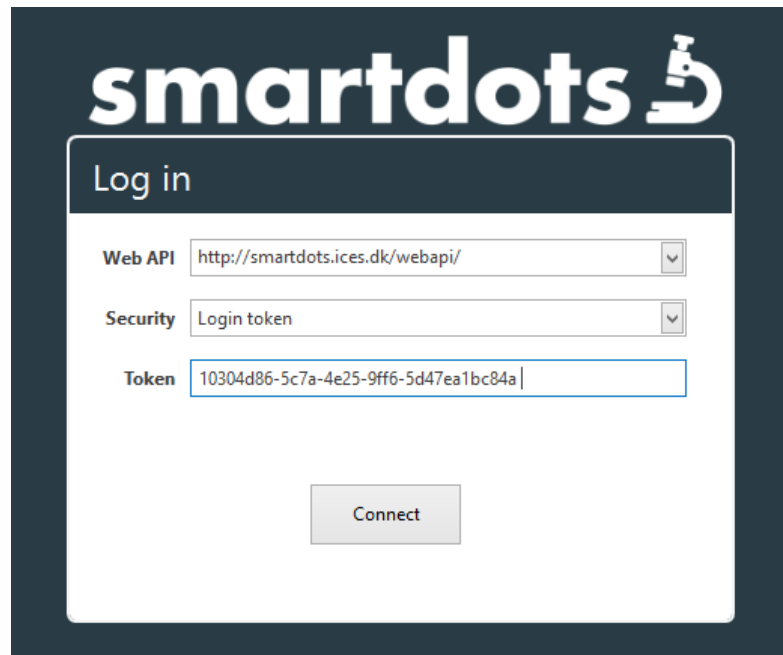
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1 Login

You need to connect to the ICES web api using the Token authentication. A token can be obtained here <http://ices.dk/marine-data/tools/Pages/smartdots>. The token provided should be copied and pasted into the login screen shown in the image below. Press connect to continue.

The image shows the Smartdots login interface. At the top, the 'smartdots' logo is displayed in white on a dark blue background. Below the logo is a white login form with a dark blue header that says 'Log in'. The form contains three input fields: 'Web API' with the value 'http://smartdots.ices.dk/webapi/', 'Security' with the value 'Login token', and 'Token' with the value '10304d86-5c7a-4e25-9ff6-5d47ea1bc84a'. A 'Connect' button is located at the bottom of the form.

smartdots

Log in

Web API

Security

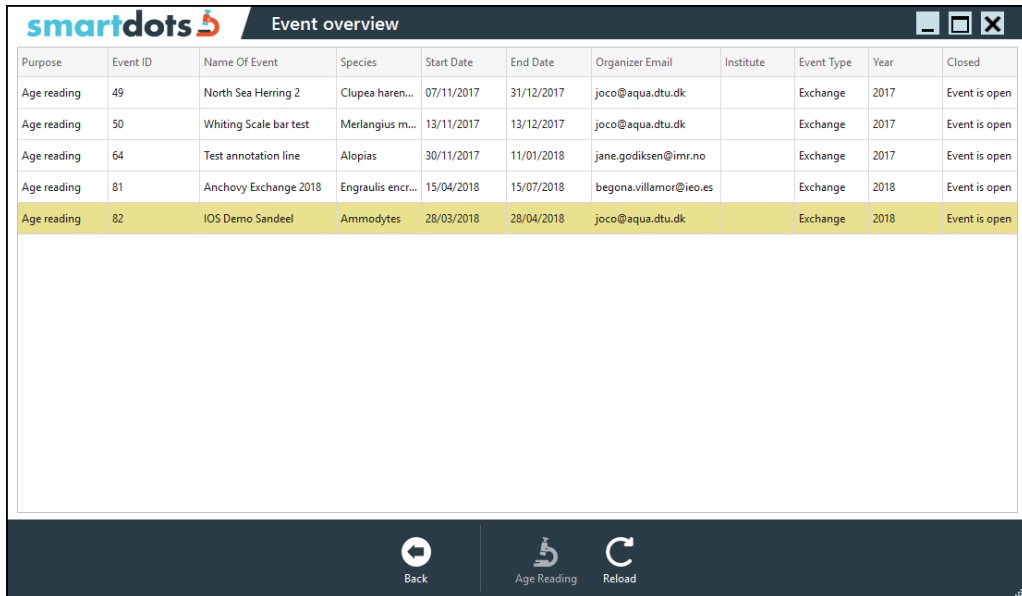
Token

Connect

Figure 1. Smartdots login screen.

2 Event screen

On this screen the user is presented with a list of all available workshops/exchanges to make age readings on. Double-Click on the required exchange/workshop to start the age reading.



Purpose	Event ID	Name Of Event	Species	Start Date	End Date	Organizer Email	Institute	Event Type	Year	Closed
Age reading	49	North Sea Herring 2	Clupea haren...	07/11/2017	31/12/2017	joco@aqua.dtu.dk		Exchange	2017	Event is open
Age reading	50	Whiting Scale bar test	Merlangius m...	13/11/2017	13/12/2017	joco@aqua.dtu.dk		Exchange	2017	Event is open
Age reading	64	Test annotation line	Alopias	30/11/2017	11/01/2018	jane.godiksen@imr.no		Exchange	2017	Event is open
Age reading	81	Anchovy Exchange 2018	Engraulis encr...	15/04/2018	15/07/2018	begona.villamor@ieo.es		Exchange	2018	Event is open
Age reading	82	IOS Demo Sandeel	Ammodytes	28/03/2018	28/04/2018	joco@aqua.dtu.dk		Exchange	2018	Event is open

Figure 2. Event overview screen.

3 Age reading

The age reading screen contains all the age-reading information. This screen consists of multiple components numbered 1-7 in the Figure 3.

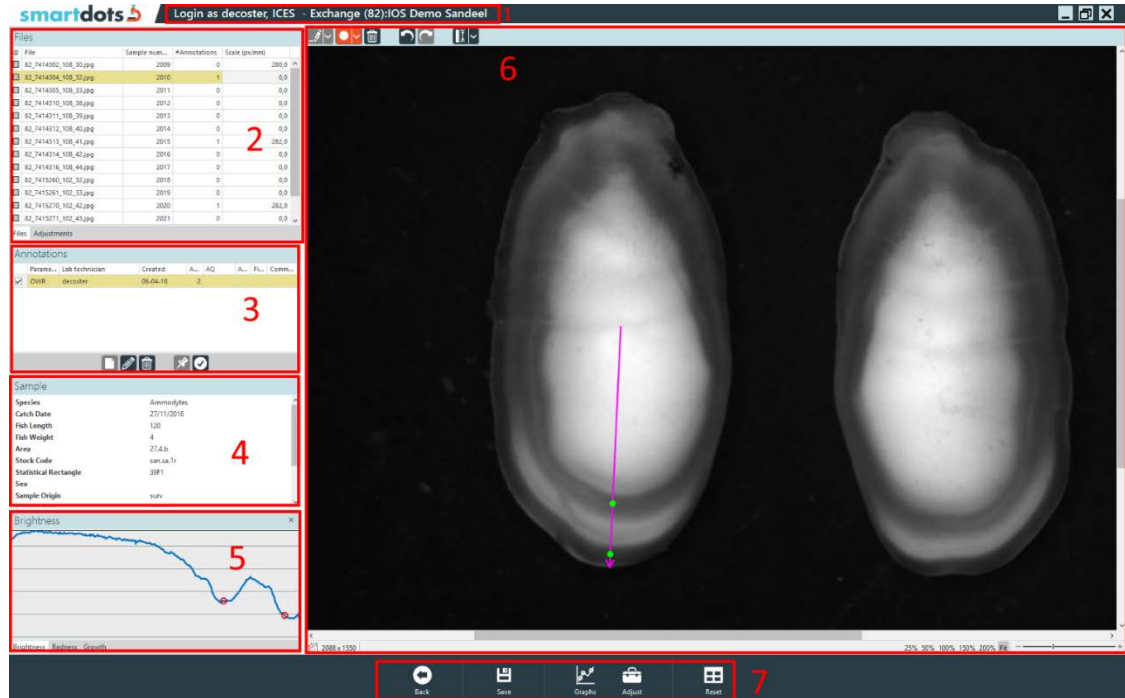


Figure 3. Age reading screen.

3.1 Title

Shows information about the logged in user and the current workshop/exchange he/she is working on.

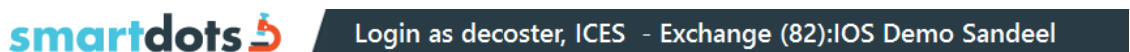


Figure 5. Title bar

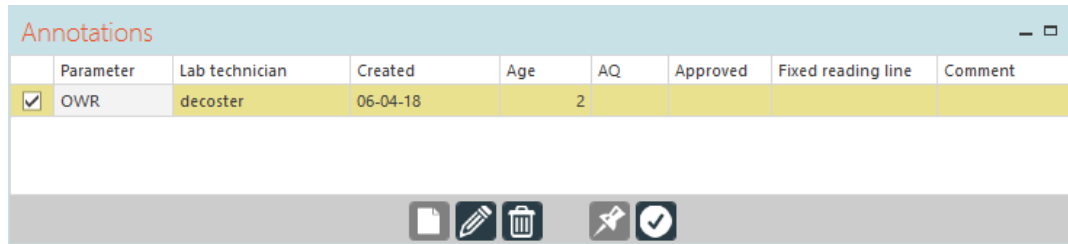
@	File	Sample number	#Annotations	Scale (px/mm)
	82_7414302_108_30.jpg	2009	0	280,0
	82_7414304_108_32.jpg	2010	1	0,0
	82_7414305_108_33.jpg	2011	0	0,0
	82_7414310_108_38.jpg	2012	0	0,0
	82_7414311_108_39.jpg	2013	0	0,0

Figure 4. Files information.

3.2 Files

Contains information about all loaded image files. The file name is the physical file name the image has. The sample number is the link between the image and the sample (= fish) the otolith originates from. The #Annotations is the number of readings the user can see. The scale is the amount of pixels that represent 1 millimetre when the image is zoomed 100%.

3.3 Annotations



	Parameter	Lab technician	Created	Age	AQ	Approved	Fixed reading line	Comment
<input checked="" type="checkbox"/>	OWR	decoster	06-04-18	2				

Figure 6. Annotations information.

Shows information about the age readings for the selected file. Parameter describes what type of annotations are made. This can be winter rings, summer rings, day rings etc. Lab technician is the reader. The AQ indicates the quality of the age reading. Approved means the user has approved the reading so that it can be included in reporting. The fixed reading line indicates that the line for this age reading will be used for everyone who creates an age reading. Only administrators can create fixed reading lines. The comment is optional but can be used by the user to add remarks.

There are several buttons at the bottom of this component. From left to right:

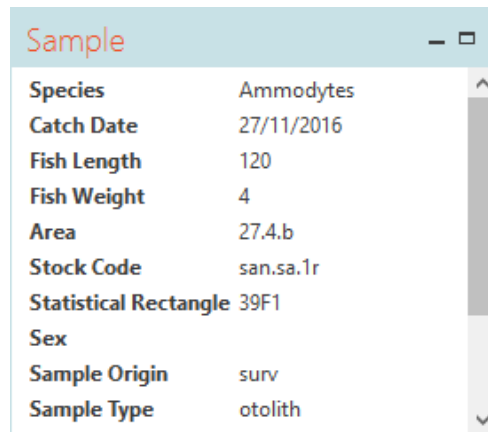
- Create: Creates a new record for age reading. The user can now start making annotations.
- Edit: A popup shows up with the properties that the user can change. Here you can also add comments.
- Delete: delete the reading.
- Pin: This is only for administrators. It creates the fixed reading line. All users will have to annotate on this line.
- Approve/Disapprove: Toggles the approval of the reading.

Do not mark the centre of the outermost edge of the otolith. Only place a mark at the end of each winter ring as these are counted when estimating the age. SmartDots will automatically give the age of the fish based on the number of annotations that you make.

An AQ score must be provided for each age: AQ1: Easy to age with high precision; AQ2: Difficult to age with acceptable precision; AQ3: Unreadable or very difficult to age with acceptable precision.

The final annotation must be approved for each otolith that is to be included in the reporting

3.4 Sample



Attribute	Value
Species	Ammodytes
Catch Date	27/11/2016
Fish Length	120
Fish Weight	4
Area	27.4.b
Stock Code	san.sa.1r
Statistical Rectangle	39F1
Sex	
Sample Origin	surv
Sample Type	otolith

Figure 7. Sample information.

This window shows all information about the sample fish linked with the image. This section is read-only.

3.5 Graphs

Graphs show information about the selected age reading's line and annotations. There are currently three graphs in SmartDots.

3.5.1 Brightness

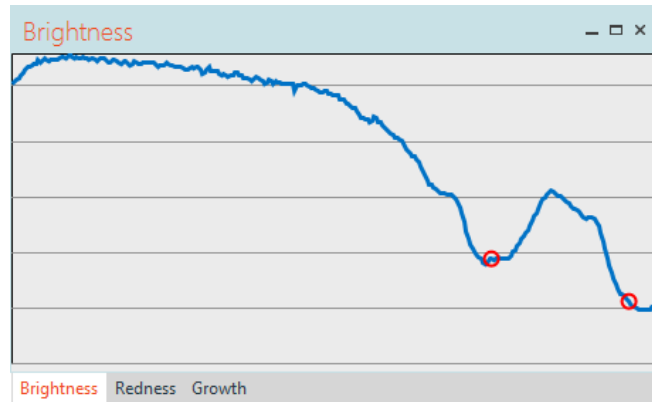


Figure 8. Brightness graph.

Displays the brightness of the image under the line from start to end. This can be used to detect rings. The graph will display the location of the cursor if hovered near the line. When Dot-mode is active, the user can click the graph on a specific location to add the dot.

3.5.2 Redness

Redness operates in the same way as brightness but displays the red value as opposed to the brightness of pixels. This is only used for otoliths that are imbedded in a red colouring agent.

3.5.3 Growth

Shows the distance between annotations.

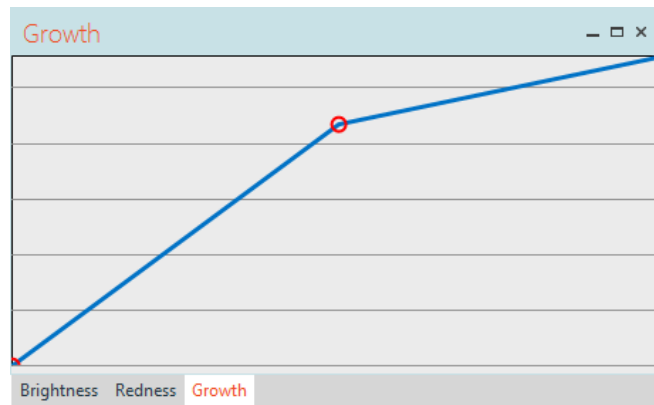


Figure 9. Growth graph.

3.6 Editor

This is where users can draw on the otolith image.

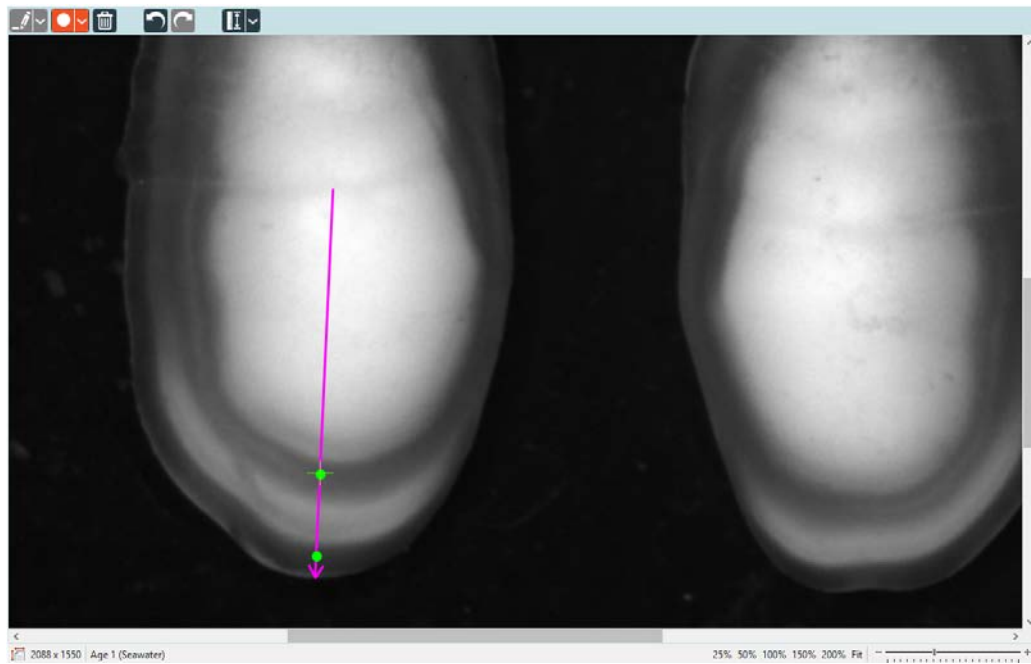


Figure 10. Editor screen with otolith image, drawing modes (top bar), and scaling options (bottom bar).

At the top, there are three modes (line-mode to draw lines, dot-mode to draw dots, and delete-mode to delete lines and/or dots). There are also buttons for undo/redo. The last button is used to measure scale. All buttons with an arrow next to them have additional options.

The image and all drawn shapes are in the middle of the window.

The information bar and zoom options are at the bottom of the window.

3.7 Toolbar

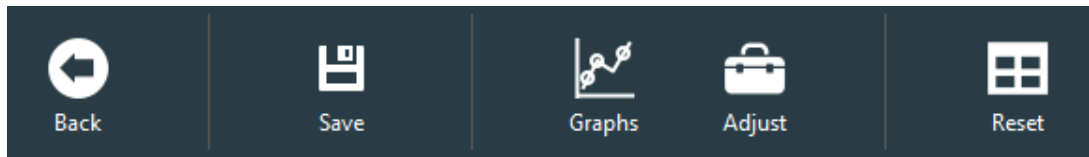


Figure 11. Toolbar buttons.

These buttons contain logic not specifically related to an age reading but can be helpful for the user.

- Back: return to the previous screen.
- Save: save current progress.
- Graphs: show/hide the graphs.
- Adjust: show/hide the adjustments. Adjustments can be found as a tab under Files. It allows the user to temporarily adjust the brightness/contrast of the image (Figure 11).
- Reset: resets all layout.

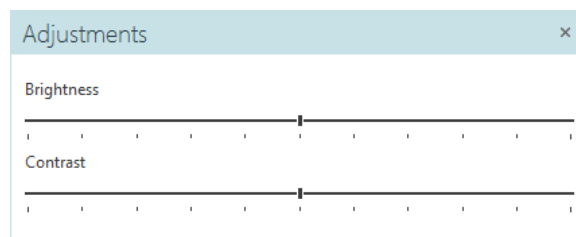


Figure 12. Adjustments panel.

4 Contacts

The following people can be contacted about SmartDots:

- Carlos Pinto, ICES Data Centre: carlos@ices.dk
- Julie Olivia Davies, DTU Aqua: joco@aqua.dtu.dk
- Kevin DeCoster, ILVO: Kevin.DeCoster@ilvo.vlaanderen.be

