Contents

# AddCariesROI

*(Tags: @UR, @UR008, @Analysis)*

As a dentist

I want to add caries regions of interest at a location I deem dubious

So that I can record for future use and share the results with a patient

## AddCariesROI

*(Tags: @UR008-1)*

**Given**  I submit an image

**When**  I choose a location at which to add a caries ROI to the image

**Then**  the new caries ROI is show on the image

# AllowIPRange

*(Tags: @UR, @UR014, @Security, @WebOnly)*

As an administrator

I want to create, edit and delete whitelisted or Allowed IP Ranges

So that I can allow users accessing from those IP addresses to access analysis functionality without providing credentials

## ListAllowedIPRange

*(Tags: @UR014-1)*

**Given**  I am logged in with admin permissions

**When**  I request the Allowed IP Ranges page

**Then**  a list of allowed ip ranges is displayed

## AddAllowedIPRange

*(Tags: @UR014-2)*

**Given**  I am logged in with admin permissions

**When**  I create an Allowed IP Range for my computer

**Then**  my IP address is included in the list of Allowed IP Ranges

## EditAllowedIPRange

*(Tags: @UR014-3)*

**Given**  I am logged in with admin permissions

**And**  a single Allowed IP Range exists that includes my computer or subdomain's IP address

**When**  I edit the Allowed IP Range for my computer and enter a different computer's IP address

**Then**  the IP address is updated in the list of Allowed IP Ranges

## DeleteAllowedIPRange

*(Tags: @UR014-4)*

**Given**  I am logged in with admin permissions

**And**  a single Allowed IP Range exists that includes my computer or subdomain's IP address

**When**  I delete the Allowed IP Range for my computer

**Then**  the IP address is no longer present in the list of Allowed IP Ranges

## ExpireAllowedIPRange

*(Tags: @UR-14-5)*

**Given**  I am logged in with admin permissions

**And**  a single Allowed IP Range exists that includes my computer or subdomain's IP address

**When**  I set the Expiry Date to be some date in the past

**Then**  the expiry date is updated in the list of Allowed IP Ranges

# BypassLogin

*(Tags: @UR, @UR013, @Security, @WebOnly)*

As a dentist at an institution

I want to bypass the standard login security

So that I can access functionality immediately

And so that I can access functionality from any computer at the institution without entering credentials

## ConnectFromAllowedIP

*(Tags: @UR013-1)*

**Given**  I am using a computer within an allowed IP range

**And**  I am logged out of the application

**When**  I request the analysis page

**Then**  the analysis page is displayed

**When**  I submit an image

**Then**  the image and results are displayed

## ConnectFromOtherIP

*(Tags: @UR013-2)*

**Given**  I am using a computer that isn't included within an allowed IP range

**And**  I am logged out of the application

**When**  I request the analysis page

**Then**  the login page is displayed

## ConnectFromExpiredIP

*(Tags: @UR013-3)*

**Given**  I am using a computer within an allowed IP range but an expiry date in the past

**And**  I am logged out of the application

**When**  I request the analysis page

**Then**  the login page is displayed

# CommandLineInterface

*(Tags: @UR, @UR024, @Integration, @DesktopOnly)*

As a third-party developer

I want to be able to pass command line arguments to AssistDent

So that I can instruct it to analyze specific images

And display custom info

## SubmitImage

*(Tags: @UR024-1)*

**When**  I submit an image filename to AssistDent from a third-party

**Then**  AssistDent analyses the specified image

**And**  displays the correct patient name

# ControButtonToolTips

*(Tags: @UR, @UR010, @Labelling, @WebOnly)*

As a dentist

I want to be given indications of what the control buttons means

so that I can understand the functionality

## ControButtonToolTips

*(Tags: @UR010-1)*

**Given**  I have submitted an image

**When**  I hover over the results buttons below the image

**Then**  tool-tips appear to indicate the function of each button

# CustomerPayment

*(Tags: @UR, @UR029, @DesktopOnly, @Admin)*

As a company

We want to accept payment for subscriptions to AssistDent

So we can make money

## TakePaymentUK

*(Tags: @UR029-1)*

**Given**  I have register a trial licence for a UK user

**When**  I access the purchase licence page

**And**  choose the default price

**Then**  the payment is in GBP

**And**  UK VAT is applied

## TakePaymentEU:

*(Tags: @UR029-2)*

**Given**  I have register a trial licence for an EU user

**When**  I access the purchase licence page

**And**  choose the default price

**Then**  the payment is in Euros

**And**  UK VAT is not applied

## ViewInvoiceUK:

*(Tags: @UR029-3)*

**Given**  I have paid for a subscription for a UK user

**When**  I access my billing portal

**Then**  I can view an invoice for each month

**And**  the invoice contains the price paid

**And**  the invoice contains the customer name and address

**And**  the invoice contains the VAT amount

**And**  the invoice contains the MIL VAT number

## ViewInvoiceEuro:

*(Tags: @UR029-4)*

**Given**  I have paid for a subscription for an EU user

**When**  I access my billing portal

**Then**  I can view an invoice for each month

**And**  the invoice contains the price paid

**And**  the invoice contains the customer name and address

**And**  the invoice contains a statement regarding reverse tax

# DeleteCariesROI

*(Tags: @UR, @UR006, @Analysis)*

As a dentist

I want to delete caries regions of interest that I judge to be incorrect

So that I can share the results with a patient without showing false positives

## DeleteCariesROI

*(Tags: @UR006-1)*

**Given**  I submit an image

**And**  the image contains caries ROIs

**When**  I select one or more caries ROIs

**And**  delete them

**Then**  the caries ROIs are removed from the image

# DesktopLicensing

*(Tags: @UR, @UR025, @Admin, @DesktopOnly)*

As a company

We want to issue users with a licence key

So that we can restrict users to free trials and paying customers

## RegisterTrialLicence

*(Tags: @UR025-1)*

**Given**  no licence is registered for the current machine

**When**  I start the desktop app

**Then**  I am required to complete user registration

**And**  the application starts

**And**  a customer is created on CryptoLens with the correct details

**And**  a customer is created on Stripe with the correct details

## LicenceExpired

*(Tags: @UR025-2)*

**Given**  a licence is registered for the current machine

**And**  that licence has expired

**When**  I start the desktop app

**Then**  the app does not start

## LicenceUpgrade

*(Tags: @UR025-3)*

**Given**  a licence is registered for the current machine

**And**  that licence has expired

**When**  I start the desktop app

**Then**  I am directed to the store website to purchase a Licence

**And**  there is an appropriate choice of purchase options for me

## ValidLicence

*(Tags: @UR025-4)*

**Given**  a licence is registered for the current machine

**And**  that licence has not expired

**When**  I start the desktop app

**Then**  the desktop app starts

## DisplayLicence

*(Tags: @UR025-5)*

**Given**  a licence is registered for the current machine

**And**  that licence has not expired

**Then**  the licence key can be seen in the application

**And**  the licence expiry date can be seen in the application

## EnterNewLicenceKey

*(Tags: @UR025-6)*

**Given**  a valid licence is registered for the current machine

**When**  I enter a new valid licence key

**And**  restart the application

**Then**  the application starts

**And**  the application uses the new licence key

## PurchaseLicence

*(Tags: @UR025-7)*

**Given**  that I have been directed to the store website to purchase a license

**When**  I purchase a license

**Then**  the license expiry date is extended as specified by the product

## ChangeTrialPeriod

*(Tags: @UR-25-8)*

**Given**  a licence is not generated for the current machine

**When**  I configure the store app to generate a 1 day licence

**And**  I register for a trial licence

**Then**  the licence expiry date can be seen in the application

**And**  the expiry date is in 1 day

# DisplayCariesDetection

*(Tags: @UR, @UR002, @Analysis)*

As a dentist

I want to see which teeth have been detected and analyzed for caries

So that I can check for caries manually on undetected teeth

## TeethIndicatorsAreDisplayed

*(Tags: @UR002-1)*

**When**  I submit an image

**Then**  the detected teeth are indicated on the image

# DisplayCariesDetection

*(Tags: @UR, @UR003, @Analysis)*

As a dentist

I want to view caries regions of interest on a bitewing image

So that I can see where early stage decay is occuring

## ROIIndicatorsAreDisplayed

*(Tags: @UR003-1)*

**When**  I submit an image

**Then**  the deteted caries ROIs are indicated

## ROIIndicatorsAreEasilyVisible

*(Tags: @UR003-2)*

**When**  I submit an image

**Then**  the deteted caries ROIs are indicated

**And**  the detected caries ROI indicators are easily visible

# DisplayImage

*(Tags: @UR, @UR001, @Analysis)*

As a dentist

I want to view one or more bitewing images

So that when caries detection is performed I can view the results in place over the analyzed images

## ImageIsDisplayed

*(Tags: @UR001-1)*

**When**  I submit an image

**Then**  the image is displayed on screen

## MultipleImagesDisplayed

*(Tags: @UR001-2, @WebOnly)*

**When**  I submit 4 images

**Then**  all 4 images are displayed on screen

# EnterFeedback

*(Tags: @UR, @UR021, @Admin, @WebOnly)*

As a user

I want to enter feedback comments

So that I can tell Manchester Imaging what I think of assistdent.net

## UserCanEnterFeedback

*(Tags: @UR021-1)*

**Given**  I have logged in with analysis permissions

**When**  I access the feedback page

**Then**  I can enter a comment

## AllowedIPCanEnterFeedback

*(Tags: @UR021-2)*

**Given**  I have accessed from an allowed IP address

**When**  I access the feedback page

**Then**  I can enter a comment

# ExpandImage

*(Tags: @UR, @UR005, @Analysis, @WebOnly)*

As a dentist

I want to expand the image view to view full screen

So that I can see potentially affected areas in more detail

And I can share the image with a patient

## ExpandImageToFullScreen

*(Tags: @UR005-1)*

**Given**  I submit an image

**When**  I expand the image view

**Then**  the image is displayed using as much of the screen as possible

## ExitFullScreen

*(Tags: @UR005-2)*

**Given**  I am viewing an image in full screen

**When**  I collapse the image view

**Then**  the image is displayed in preview/tile view

# FeatureTour

*(Tags: @UR, @UR012, @Labelling, @WebOnly)*

As a dentist

I want to take a tour of features

So that I can learn how to use assistdent.net

## TakeTourOfFeatures

*(Tags: @UR012-1)*

**When**  I follow a link to the tour

**Then**  a tour of features is started

**And**  submission is introduced

**And**  display is introduced

**And**  magnify is introduced

**And**  hide/display annotation is introduced

**And**  delete is introduced

**And**  flip is introduced

**And**  add is introduced

**And**  full screen is introduced

# ImageID

*(Tags: @UR, @UR023, @Analysis, @WebOnly)*

As a user

I want to be able to see the filename name next to the image

And be able to edit that ID to whatever text I wish

So that I can identify and label any of the images on the analysis page

And confirm that I submitted the correct image for analysis

## ShowImageIDAsFilename

*(Tags: @UR023-1)*

**Given**  I have submitted an image for analysis

**When**  the image is displayed

**Then**  the ID of the image is shown

**And**  set as the image filename

## EditImageID

*(Tags: @UR023-2)*

**Given**  I have submitted an image for analysis

**When**  I hover over the ID of the image

**Then**  A box appears around the ID

**And**  I am able to edit the ID field and change to different value

# LegalLabelling

*(Tags: @UR, @UR015, @Labelling)*

As a regulator

I want to view the legal and safety information regarding AssistDent

So that AssistDent can be used legally and safely on patients

## DisplayLegalInformation

*(Tags: @UR015-1)*

**When**  I request the clinical use information

**Then**  the information includes the UDI Device Identifier

**And**  the information includes the CE mark

**And**  the information includes the manufacturer details

**And**  the information includes the date of manufacture

**And**  the information includes the intended of use

**And**  the information includes the indications for use

**And**  the information includes the contraindications

**And**  the information includes the warnings and precautions

# LogDetections

*(Tags: @UR, @UR019, @Security, @WebOnly)*

As an admin

I want to view size, dimensions, analysis time and source IP address of detections by username

So that I can see how often and when detections are being performed under each account

As an admin

I want to view size, dimensions, analysis time and source IP address of detections by Allowed IP

So that I can see how often and when detections are being performed from an Allowed IP range

## CanAccessUserDetections

*(Tags: @UR019-1)*

**Given**  I have logged in with admin permissions

**When**  I access the Details page for an individual user

**Then**  I can see a list of detections

**And**  I can see the date and time of the detection

**And**  I can see the size and dimensions of the analysed image

**And**  I can see the IP address from which the detection was made

## CanAccessAllowedIPDetections

*(Tags: @UR019-2)*

**Given**  I have logged in with admin permissions

**When**  I access the Details page for an individual Allowed IP

**Then**  I can see a list of detections

**And**  I can see the date and time of the detection

**And**  I can see the size and dimensions of the analysed image

**And**  I can see the IP adderss from which the detection was made

# MagnifyImage

*(Tags: @UR, @UR004, @Analysis)*

As a dentist

I want to zoom in on a selected area of the image

So that I can see potentially affected areas in more detail

## MagnifierOnImage

*(Tags: @UR004-1)*

**Given**  I submit an image

**And**  the image is displayed on screen

**When**  I hold the left mouse button down

**Then**  a portion of the image is displayed at a higher magnification

## HideAnnotationOnMagnify

*(Tags: @UR004-2)*

**Given**  I submit an image

**And**  I activate the magnifier

**When**  I move the mouse cursor over a caries ROI indicator

**Then**  the indicator is hidden in the magnified view

**When**  I move the mouse cursor over a tooth indicator

**Then**  the indicator is hidden in the magnified view

# ManageUserLogins

*(Tags: @UR, @UR018, @Security, @WebOnly)*

As an administrator

I want to create, view and delete user accounts

So that I can grant individuals access to analysis functionality

## ListUsers

*(Tags: @UR018-1)*

**Given**  I am logged in with admin permissions

**When**  I request the Manage Users page

**Then**  a list of users is displayed

## AddUser

*(Tags: @UR018-2)*

**Given**  I am logged in with admin permissions

**When**  I create an User

**And**  choose a valid Password of at least 6 characters

**And**  choose a valid Password with at least one lowercase, capital and number

**Then**  my User is included in the list of users

## DeleteUser

*(Tags: @UR018-3)*

**Given**  I am logged in with admin permissions

**And**  a single User exists

**When**  I delete the User for my computer

**Then**  the User is no longer present in the list of users

# ProtectPatientData

*(Tags: @UR, @UR011, @Security, @WebOnly)*

As a dentist

I want to anonymise DICOM images before I send them to Manchester Imaging

So that I can keep my patients' identities private

As a dentist

I want to encrypt image data when sent to Manchester Imaging

So that I can prevent my patients' image data being intercepted en route

## AnonymiseDicomData

*(Tags: @UR011-1)*

**When**  I submit a DICOM image file for analysis

**Then**  the DICOM file when read on the server contains no patient identifying data

## SecureAllTraffic

*(Tags: @UR011-2)*

**When**  I load the Assistdent web page

**Then**  the page is accessible only via https

**And**  the connection is secure

# RepositionCariesROI

*(Tags: @UR, @UR009, @Analysis)*

As a dentist

I want to be able to reposition and change arrow indicator directions

so that I can indicate alternative regions that I believe to be carious

## MoveCariesROI

*(Tags: @UR009-2)*

**Given**  I have submitted an image

**And**  the image contains at least one ROI

**When**  I click-and-drag with the mouse button on an ROI

**Then**  the ROI is moved to the the new location

## FlipCariesROI

*(Tags: @UR009-2)*

**Given**  I submit an image

**And**  the image contains caries ROIs

**When**  I select one or more caries ROIs

**And**  flip its direction

**Then**  the caries ROIs direction is flipped horizontally

# RestrictAccess

*(Tags: @UR, @UR028, @DesktopOnly, @Admin)*

As a company

We want to obstruct access to AssistDent in certain territories

So that it can only be used in territories where we have regulatory clearance

## CanUseInEU

*(Tags: @UR028-1)*

**Given**  no licence is registered for the current machine

**When**  I start AssistDent

**And**  I enter details including country name "Denmark"

**Then**  I can register

**And**  AssistDent starts

## CanUseInUK

*(Tags: @UR028-2)*

**Given**  no licence is registered for the current machine

**When**  I start AssistDent

**And**  I enter details including country name "United Kingdom

**Then**  I can register

**And**  AssistDent starts

## CannotUseIn

*(Tags: @UR028-3)*

**Given**  no licence is registered for the current machine

**When**  I start AssistDent

**And**  I enter details including country name "United States"

**Then**  I can register

**And**  AssistDent starts

# SeeWhatsNew

*(Tags: @UR, @UR027, @DesktopOnly, @Labelling)*

As a user

I want to be made aware of new features

So that I know what's changed

## SeeNewFeaturesOnStartup

*(Tags: @UR027-1)*

**Given**  I have not dismissed the news for the version installed

**When**  I start AssistDent

**Then**  the new features are displayed

## StopSeeingNewFeatures

*(Tags: @UR027-2)*

**Given**  I have not dismissed the news for the version installed

**And**  I start AssistDent

**And**  the new features are displayed

**When**  I dismiss/request the new features are no longer displayed

**And**  I restart AssistDent

**Then**  AssistDent restarts

**And**  the new features are not dismissed

## SeeNewFeaturesAfterStartup

*(Tags: @UR027-3)*

**Given**  I have started AssistDent

**When**  I access the new features

**Then**  the new features are displayed

# ShowProgress

*(Tags: @UR, @UR026, @Analysis)*

As a user

I want confirmation that AssistDent is performing caries detection

So that I can wait for the analysis to complete

## ShowAnalysisProgress

*(Tags: @UR026-1)*

**When**  I perform caries detection

**Then**  the analysis status is reported at relevant stages

# SubmitImages

*(Tags: @UR, @UR016, @Analysis, @WebOnly)*

As a dentist

I want to submit one or more images for analysis

So that I can request caries detection on my patients' images

## SubmitSingleImage

*(Tags: @UR016-1)*

**Given**  I am authorized with analysis permissions

**And**  I navigate to the Analysis page

**When**  I browse for a single bitewing image

**Then**  the image is sent

**And**  the image is displayed

**And**  results are displayed

## SubmitMultipleImages

*(Tags: @UR016-2)*

**Given**  I am authorized with analysis permissions

**And**  I navigate to the Analysis page

**When**  I browse and select 2 bitewing images

**Then**  the images are sent

**And**  the images are displayed

**And**  results for both images are displayed

## SubmitTiffImage

*(Tags: @UR016-3)*

**Given**  I am authorized with analysis permissions

**And**  I navigate to the Analysis page

**When**  I browse for a single tiff bitewing image

**Then**  the image is sent

**And**  the image is displayed

**And**  results are displayed

## SubmitDICOMImage

*(Tags: @UR016-4)*

**Given**  I am authorized with analysis permissions

**And**  I navigate to the Analysis page

**When**  I browse for a single DICOM bitewing image

**Then**  the image is sent

**And**  the image is displayed

**And**  results are displayed

# ToggleAnnotationVisibility

*(Tags: @UR, @UR007, @Analysis)*

As a dentist

I want to hide all annotation

So that I can review the image grade and look for other conditions

## HideImageAnnotation

*(Tags: @UR007-1)*

**Given**  I submit an image

**And**  the image contains caries ROIs

**When**  I hide the annotation

**Then**  the tooth and caries ROI indicators are hidden from view

## RestoreImageAnnotation

*(Tags: @UR007-2)*

**Given**  I submit an image

**And**  the image contains caries ROIs

**And**  I have hidden the annotation

**When**  I restore the annotation

**Then**  the tooth and caries ROI indicators are displayed

# UpgradeClient

*(Tags: @UR, @UR024, @Admin, @DesktopOnly)*

As a user

I want to know when updates are available to the desktop client

So that I can keep the software up to date

And use the best performing algorithms

## CheckForUpdatesNoneAvailable

*(Tags: @UR024-1)*

**Given**  updates are not available

**When**  I start the desktop app

**Then**  the app starts normally

## CheckForUpdatesWhenAvailable

*(Tags: @UR024-2)*

**Given**  updates are available

**When**  I start the desktop app

**Then**  the user is informed of the availability of an update

## DownloadUpdate

*(Tags: @UR024-3)*

**Given**  updates are available

**When**  I start the desktop app

**Then**  the app starts the user is directed to the updated installer

# UsernameLogin

*(Tags: @UR, @UR017, @Security, @WebOnly)*

As a dentist

I want to authenticate myself using a username and password

So that I can perform analyses from any remote computer

## LoginWithUsername

*(Tags: @UR017-1)*

**Given**  I am logged out

**And**  I have Analysis user role

**When**  I request login

**And**  enter my username and password

**Then**  I can access the analysis page

## LoginWithUsernameWithoutAnalysisRole

*(Tags: @UR017-2)*

**Given**  I am logged out

**And**  I do not have Analysis user role

**When**  I request login

**And**  enter my username and password

**Then**  I cannot access the Analysis page

# ViewAnalysisProgress

*(Tags: @UR, @UR022, @Analysis, @WebOnly)*

As a user

I want to view the progress of my image upload, and the subsequent analysis

So that I can see the application is responding to my request

## UserCanViewUploadProgress

*(Tags: @UR022-1)*

**Given**  I have logged in with analysis permissions

**When**  I submit an image for analysis

**Then**  I can see a progress indicator to show file upload progress

**And**  it indicates how much of the file has been uploaded

## UserCanViewAnalysisProgress

*(Tags: @UR022-2)*

**Given**  I have logged in with analysis permissions

**And**  I have submitted an image for analysis

**When**  the file upload completes

**And**  the image is visible

**Then**  I can see a progress indicator to show analysis progress

# ViewFeedback

*(Tags: @UR, @UR020, @Admin, @WebOnly)*

As Manchester Imaging

We want to view feedback comments by user or allowed ip

So that we can see how a user/group of users feel about assistdent.net

## CanAccessUserFeedback

*(Tags: @UR020-1)*

**Given**  I have logged in with admin permissions

**When**  I access the Details page for an individual user

**Then**  I can see a list of feedback comments

**And**  I can see the date of each comment

## CanAccessAllowedIPFeedback

*(Tags: @UR020-2)*

**Given**  I have logged in with admin permissions

**When**  I access the Details page for an individual Allowed IP

**Then**  I can see a list of feedback comments

**And**  I can see the date of each comment