LiteView  
Requirements  
Specification

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LiteView  
REQUIREMENTS SPECIFICATION

[IDS]

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Table of Contents

[Section 1. Overview 1](#_Toc424654261)

[1.1 Purpose 1](#_Toc424654262)

[1.2 About EPR Integration 1](#_Toc424654263)

[1.3 About The External Thumbnail Viewer 1](#_Toc424654264)

[Section 2 EPR Integration (URL) Requirements 2](#_Toc424654265)

[2.1 System Requirements 2](#_Toc424654266)

[2.2 Licenses 2](#_Toc424654267)

[2.3 User Account 2](#_Toc424654268)

[2.4 Permissions 3](#_Toc424654269)

[2.5 The URL 3](#_Toc424654270)

[Section 3 External Thumbnail Viewer Requirements 4](#_Toc424654271)

[3.1 Web browser 4](#_Toc424654272)

[3.2 EPR Integration (URL) configuration 4](#_Toc424654273)

[3.3 Licenses 4](#_Toc424654274)

[3.4 The URL 4](#_Toc424654275)

[Section 4 Using EPR Integration (URL) For the First Time 4](#_Toc424654276)

[Section 5 Using the External Thumbnail Viewer for the First Time 5](#_Toc424654277)

[Section 6 URL and Form Parameter Descriptions 6](#_Toc424654278)

[6.1 EPR Integration Parameters 6](#_Toc424654279)

[6.2 External Thumbnail Viewer Parameters 7](#_Toc424654280)

[6.3 External Thumbnail Viewer Web Control Parameters 8](#_Toc424654281)

[6.4 ViewerExternalThumbnails.exe Form Details 10](#_Toc424654282)

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# Section 1. Overview

## Purpose

This document describes how an external application can launch LiteView using the “EPR Integration (URL)”. LiteView can be launched to directly display examination data and images stored in Sectra PACS. Sectra Order Management can be launched in desired mode and state. The products can be launched without the user having to provide log on credentials. This provides a very efficient way for external applications - for example an EPR/HIS client - to also provide the users with examination data and images from the PACS. The products are launched by generating a specific web-address, a URL, while maintaining access security through the use of temporary access control keys.

This document is part of the Software Development Kit (SDK) that includes the items needed to implement such an integration with LiteView. It provides documentation as well as code examples to generate the URL required

## About EPR Integration

LiteView is a true web-application. It is only used through a web-browser.

Beside the normal log on procedure for these products, the Sectra Healthcare System also provides a way for a trusted external system to launch the products from the external application by providing a specific URL. This is called EPR Integration (URL) and is described in this SDK.

The URL can be compiled in different ways to control the behavior of the launched application. For example; if the URL only contains data to identify the current user (no patient or examination identifiers), the user will be automatically logged on and the user can then search for any patient within the system. If the URL also contains patient identifiers, an automatic search for patient information will be performed.

## About The External Thumbnail Viewer

A client application using the external thumbnail web page will do so by calling a URL pointing to an ASP.NET web page hosted by a Sectra Healthcare Server or a Sectra Satellite Server. This URL is built from two parts:

1. The first part points out the Sectra Healthcare Server or Sectra Satellite Server and External Thumbnail Viewer web page.
2. The URL integration parameters are appended with a sequence of parameters used to control thumbnail presentation specific characteristics such as colors.

The result from the external thumbnail web page call is an HTML stream that the client is responsible for displaying. A web application client could for example host the thumbnail web page in a frame set frame, while a WinForm application could host the thumbnail web page in a WebControl.

The ViewerExternalThumbnails.exe application can be used to see what the ASP.NET web page looks like within an application and can also be used for testing different parameter settings.

# Section 2 EPR Integration (URL) Requirements

## 2.1 System Requirements

For LiteView System Requirements, please refer to the System Administrator’s Guide Sectra Healthcare System

## 2.2 Licenses

There must be a basic product license for LiteView available.

A license for the IDS7 add-in “EPR Integration (URL)” is also required.

## 2.3 User Account

The PACS user account used must either exist in the WISE domain or the AD domain.

To be able to log onto the LiteView, a user account is always required. This is also true when logging on using the EPR Integration (URL). Which user account to be used is defined by the URL parameter *user\_id*.

The *user\_id* is defined on the format “<domain>\<user>”, where the <domain> specifies a local WISE domain, AD domain, or SHS domain. If the <domain> is omitted, WISE domain is assumed. Specifying domain is required when logging on as an AD or SHS user.

The <domain> is the domain identifier shown in the Sectra Enterprise Manager.

To view the domain identifier:

1. In Sectra Enterprise Manager, select User Administration->Domains.
2. In the list, double-click the local domain.
3. In the Domain Properties window for the domain, the Domain identifier is listed.

**Examples**:

**WISE domain** MyWiseHost\_7800

**AD domain** Sectra.com

**SHS domain** 5ff31a12-5129-e011-852f-001560a767d4

## 2.4 Permissions

The PACS user account must have the permission to start LiteView.

To launch LiteView:

1. Role permission "Start LiteView via EPR Integration (URL)"

2. LiteView license

## 2.5 The URL

The URL used must be a valid URL. Please see below to learn about the URL Structure.

These are the main parts of the URL:

<protocol>://<hostname>/<webservice>?<parameters>

* <protocol> http or https depending on the configuration of the web-server.
* <hostname> The hostname of the Sectra Workflow Server, Sectra Healthcare Server (or the Sectra Satellite Server) from where IDS7, LiteView or Order Management will be launched.
* <webservice> The path to the web service of Sectra Healthcare Server (or Sectra Satellite Server), Sectra LiteView Server or Sectra Workflow Server. The default path to the products implementing EPR Integration (URL) will launch the default instance and version of the web service. The default paths are:
  + LiteView has the default webservice name: "LiteView/index.html#launch"
* <parameters> Several parameters can be passed on to the launched product to control how and what it should display.
  + A chart full of the valid parameters will be included at the bottom of this document.

# Section 3 External Thumbnail Viewer Requirements

In addition to the requirements for EPR Integration (URL), the following requirements must be fulfilled for the External Thumbnail Viewer to work:

## 3.1 Web browser

Internet Explorer 7, 8 and 9 are supported.

## 3.2 EPR Integration (URL) configuration

EPR Integration (URL) needs to be configured correctly.

## 3.3 Licenses

An External Thumbnail Viewer license for the Sectra Healthcare Server is required.

## 3.4 The URL

The URL needs to be a valid URL. Please see the chart below on how to configure the URL for the External Thumbnail Viewer.

# Section 4 Using EPR Integration (URL) For the First Time

1. Check EPR Integration (URL) Requirements from Section 2
2. Add licenses
   1. Use the Licenses Tool in WISE/tools to add required licenses
3. Create a new PACS role
   1. Log on to Sectra Enterprise Manager and click **New PACS role** to create a new PACS role for the EPR Integration (URL).
   2. Name it “PACSEprRole”.
4. Create a new PACS for testing purposes
   1. In Sectra Enterprise Manager, click **New PACS user** to create a new PACS user to be used when testing the EPR Integration (URL).
   2. Name the user “EprTestUser”. Make it a member of the PACS role created in Step 3.
      1. This PACS User Account should be removed when the integration is completed
5. Set role permissions and properties
   1. Use the Sectra Enterprise Manager to ser the permissions for the PACS role created in step 3.
6. Launch the application through the EPR Integration (URL) web page
   1. Open a web-browser and give it a URL, where <hostname> should be replaced with the network name of the Sectra Healthcare server.
   2. http://<hostname>/LiteView/index.html
   3. This will launch the application and display the log on window. Manually enter the username from the user created in step 4b and supply the password.
   4. Verify that the log on works.

# Section 5 Using the External Thumbnail Viewer for the First Time

1. Check requirements
2. EPR Integration (URL) configuration
   1. Make sure that EPR Integration (URL) is configured and is working.
3. Add license
   1. Use the Licenses tool in WISE/tools to add the license for the External Thumbnail Viewer.
   2. The External Thumbnail Viewer license starts with SHS-4-0-SITE...
   3. The presentation string for the External Thumbnail Viewer license in WISE/tools is SHS #External Thumbnail Viewer 12.x SITE Lic. …
4. Start ViewerExternalThumbnails.exe
   1. Copy the content of the bin folder (from the SDK) to your local workstation and start the application by double-clicking on ViewerExternalThumbnails.exe.
   2. A description of how to fill out the form can be found in the bottom of the document.
5. Generate a URL
   1. Press “Step1. Generate URL” on the “Get thumbnails” tab to process the information and generate a URL.
6. View the thumbnails
   1. Press “Step2. Get thumbnails” to view the thumbnail images in the window.
7. Launch IDS7 or LiteView from the thumbnail view
   1. Click on one of the thumbnails to launch LiteView.
   2. This requires that the option 'Launch on click' is 'Yes'.

# Section 6 URL and Form Parameter Descriptions

## 6.1 EPR Integration Parameters

|  |  |
| --- | --- |
| **Parameter** | **Description** |
| *stop* | The value of the stop parameter should, when used, always be “1”.  When used with LiteView, it ends the current session and forces logout of the current user. It can take a few seconds before the client windows act according to this. No new server requests will be successfully authorized in the meantime, but any information still visible in the browser, can be read by a user until the forced logout. If further url-commands are issued before these seconds have passed the user might not be logged out and will still be able to use the system. For LiteView, the stop parameter will also terminate any running IDS7 started by the LiteView client. The “stop” command can be used without any other parameter specified. |
| *user\_id* | The user name to be used to login to the launched product. If the “ user\_id ” parameter is omitted, the launched product will start with requesting the user to log on with user name and password before it displays the specified examinations. It can optionally be formatted to target a specific domain by separating the domain\_id and user\_id by a backslash. Example: “ <domain\_id>\<user\_id> ” |
| *time* | Timestamp for the creation of the URL. The timestamp is the system clock time measured in seconds since January 1st 1970 Note: The timestamp should not be compensated for daylight saving. |
| *key* | Access control key, represented as a hexadecimal string. The access control key is based on the time timestamp and it is only valid for a limited period of time. |
| *pat\_id* | Patient identifier string. |
| *acc\_no* | Accession number string. The parameter value can be a list of accession numbers separated by character “^” if several accessions are to be viewed. All accession numbers must be associated with the same patient. |
| *exam\_id* | Examination identifier string. The parameter value can be a list of examination identifiers, separated by character “^” if several examination are to be viewed. Note: The number of items in the list should be the same as the number of items in the acc\_no list and both lists should the sorted so accession numbers and examination identifiers appears in pairs. |
| *mrn\_integration\_id* | Medical Record Number (MRN) integration ID. This value is combined with the patient ID to provide a unique patient identifier. It is defined for each Medical Number Group in Sectra Enterprise Manager, under the Servers node for the Sectra Healthcare Server. This parameter can also be configured as a default value for each workstation. Note: The parameter value is the MRN integration ID specified for the MRN group, and not the name of the MRN group. |
| *acc\_no\_group* | Accession number group. This value combined with the accession number and examination ID uniquely identifies an examination. It is defined in Sectra Enterprise Manager, on the properties page, general tab, for the WISE server. This parameter can also be configured as a default value for each workstation. |
| *sop\_uid* | Specifies a DICOM SOP Instance UID. This parameter must be used in combination with one single accession number and exam id. |
| *frame\_number* | Can be used in combination with DICOM SOP Instance UID to specify which frame to display in a multi-frame image. Frame numbers start at 1. This parameter is optional (default value is 1). |
| *allow\_pat\_change* | Defaults to 1 which is enabled but if set to 0 (disabled) the user will not be able to change patient within LiteView. |
| *limited\_access* | If set to 1, the patient history will not include other examinations than those specified in the URL string, and the user will not be allowed to change patient (the value of the parameter allow\_pat\_change is ignored). The default value is 0. |

## 6.2 External Thumbnail Viewer Parameters

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameter** | **Sample Value** | **Description** | **Mandatory** |
| *pat\_id* | 193201011234 | Id of current patient | *Yes* |
| *user\_id* | EL-PRE-79 | Either a user known to Sectra PACS, or a user only known by the client application. In the latter case use Sectra Enterprise Manager to configure the WISE server to ‘Automatically create users’. | *Yes* |
| *acc\_no* | HL70000000000001 | Accession number. Multiple accession numbers are separated by a ‘^’ character. The accession and examinations must be given in pairs. If several examinations with the same accession number exist, the same accession number should be entered several times separated by a ‘^’. If multiple accession numbers are asked for, the response will not be any thumbnail images but a text message saying: 'More than one examination was found' and a link to be able to launch LiteView. | *Yes* |
| *exam\_id* | HL70000000000001 | Examination id. Multiple exam id are separated by a ‘^’ character. The accession and examinations must be given in pairs. If several examinations with the same accession number exist, the same accession number should be entered several times separated by a ‘^'. If multiple examinations are asked for, the response will not be any thumbnail images but a text message saying: 'More than one examination was found' and a link to be able to launch LiteView. | *Yes* |
| *mrn\_integration\_id* | Default | Medical Record Number (MRN) integration ID. This value is combined with the patient ID to provide a unique patient identifier. It is defined for each Medical Number Group in Sectra Enterprise Manager, under the Servers node for the Sectra Healthcare Server. | *Yes* |
| *acc\_no\_group* | local\_acc\_no\_group | Accession number group. This property is defined in Sectra Enterprise Manager, on the properties page, general tab, for the WISE server. | *Yes* |
| *allow\_pat\_change* | 0 | The flag will be forwarded to the launched viewer application. | *No* |
| *time* | 1250087673 | Time of call expressed as number of milliseconds since January 1st, 1970. The time stamp should not be compensated for daylight saving. | *Yes* |
| *key* | C009E14 | Hash key computed from all parameters but the ones starting with ‘tc\_’, i.e. all parameters in this table. | *Yes* |

## 6.3 External Thumbnail Viewer Web Control Parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **Sample Value** | **Description** | **Default Value** | **Mandatory** |
| *tc\_lng* | sv-SE | Language of the thumbnail page. This is the same format that is used in the .NET CultureInfo class. The parameter will be used if it exists, otherwise the 'UserLanguages' field in the http request header is used and if also this is missing the default value en-US will be used. | *en-US* | *No* |
| *tc\_ssl* | 0 | Indicates if the launch should be handled using secure socket layer or not. 0 – no ssl, 1 - use ssl | *0* | *No* |
| *tc\_launch* | 1 | Indicates whether the user can open a full size image by clicking the corresponding thumbnail image. 0 – no launch, 1 - launch | *0* | *No* |
| *tc\_launch\_url* | [http://servername/ IDS7/3pstart.aspx](http://servername/IDS7/3pstart.aspx) | A custom url to launch when clicking a thumbnail. All other parameters will be appended to the url.  Example url for launching LiteView is https://servername/LiteView/index.html#launch.  Note:  A value for this parameter overrides the value set in advanced configuration in Sectra Enterprise Manager.  Note:  A value for this parameter requires a value for *tc\_launch\_behavior*. | <http://thumbnailserver/IDS7/3pstart.aspx> | *No* |
| *tc\_launch\_behavior* | LiteView | Determines how a clicked thumbnail should open in the browser. 'IDS7' is suitable when launching IDS7/cx to prevent a browser window to open. 'LiteView' is recommended for LiteView to let thumbnails open in the same new browser window. Note: A value for this parameter overrides the value set in advanced configuration in Sectra Enterprise Manager. Note: A value for this parameter requires a value for *tc\_launch\_url.* |  | *No* |
| *tc\_headfcol* | 216194 | Foreground color of WISE server header Expressed as hex color value, omitting the ‘#’ sign. | *White* | *No* |
| *tc\_headbcol* | CEDBDE | Background color of WISE server header Expressed as hex color value, omitting the ‘#’ sign. | *Gray* | *No* |
| *tc\_headbordercol* | 206090 | Border color ofWISE server header Expressed as hex color value, omitting the ‘#’ sign. | *Black* | *No* |
| *tc\_backgroundcol* | D5D5D5 | Background color of the entire thumbnail web page. Expressed as hex color value, omitting the ‘#’ sign. | *White* | *No* |
| *tc\_font* | Verdana, Arial, Helvetica | Fonts in priority order. If the first one (Verdana) is not installed on the client, then the second one (Arial) is selected and if that fails as well the third one (Helvetica) is chosen. If no font is installed on the client machine, the HTML default font is selected as defined by the surrounding client web application or the browser. | *HTML default font* | *No* |
| *tc\_disabledaturi* | 0 | IE8 (and later) has support for a protocol called data uri. This means images are included in the first reply and only one roundtrip to the server is required. The default value is '0', which means the server will identify the browser used and return html using data uri if possible. If tc\_disabledatauri = '1', data uri will never be used and two roundtrips to the server are required. | *0* | *No* |

## 6.4 ViewerExternalThumbnails.exe Form Details

|  |  |
| --- | --- |
| **Form Control** | **Details** |
| *Server* | The host name or ip address of the Sectra Healthcare Server or Sectra Satellite Server. |
| *Web Application* | Either Sectra Healthcare Server or Sectra Satellite Server. |
| *SSL* | If Secure Sockets Layer is used or not for the link to launch the viewer application. |
| *URL integration system password* | The system password for URL configured in Sectra Enterprise Manager. Used both for External Thumbnail Viewer and EPR Integration (URL) to Order Management. |
| *Patient ID* | A patient id of a known patient that exists in the Sectra PACS and has at least one examination with images. |
| *User ID* | A user id of a known user in the Sectra PACS or a new user that will be created by automatic creation of user accounts. |
| *Accession Number* | An accession number of an existing examination for the patient. Multiple accession numbers are separated by a ‘^’ character. The accession and examinations must be given in pairs. If several examinations with the same accession number exist, the same accession number should be entered several times separated by a ‘^’. If multiple examinations are asked for, the response will not be any thumbnail images but a text message saying: 'More than one examination was found' and a link to be able to launch LiteView. |
| *Exam Id* | An examination id of the existing examination. Multiple examination numbers are separated by a ‘^’ character. The accession and examinations must be given in pairs. If several examinations with the same accession number exist, the same accession number should be entered several times separated by a ‘^’. If multiple examinations are asked for, the response will not be any thumbnail images but a text message saying: 'More than one examination was found' and a link to be able to launch LiteView. |
| *MRN Integration Id* | The MRN integration id of the proper MRN group for the patient ID. |
| *Accession Number Group* | The accession number group for the system where the examination exists. |
| *Locale* | Name of language on the .NET culture info class format. Examples: en-US or sv-SE. |
| *Debug Mode* | If debug mode is enabled or not. If enabled some debug information will be written in the window beside the thumbnail images. |
| *Launch on Click* | If the viewer application should be launched or not when clicking the thumbnail images. |
| *Launch URL* | A custom URL to launch when clicking a thumbnail. |
| *Launch Behavior* | Determines how a clicked thumbnail should open in the browser |
| *Header Foreground Color* | Hex color value of foreground color without any '#' character. |
| *Header Background Color* | Hex color value of background color without any '#' character. |
| *Header Border Color* | Hex color value of border without any '#' character. |
| *Page background color* | Hex color value of background without any '#' character. |
| *Font Family* | Name of the fonts to be used. |
| *Host* | The Sectra Workflow Server to be used when using ViewerExternalThumbnails.exe to test launch Order Management. |
| *OM User* | The user to be used when using ViewerExternalThumbnails.exe to test launch Order Management. |