R4 GM –

PART NUMBER, BUILD NUMBER

Part#	1041/41
Build#	11.1.9.75

NEW FEATURES AND IMPROVEMENTS

PROTECTION REDUNDANCY

While working in a network, the failure of the license server stops the processing on all workstations in the network. To prevent this situation, a failproof redundant license server configuration has been introduced in this release. Now you can set up a backup license server which will take over the license management if the main license server breaks down.

For detailed instructions on setting up a redundant configuration, see “Working with the LicensingSettings.xml File” section in Developer’s Help.

EXPORT TO MEMORY

From now on FRE 11 can save recognized documents into a file stream.

In the previous release all files had to be saved on disk before they could be used in other applications. This may be not suitable, for example, due to security considerations.

IFRDocument::ExportToMemory method allows you to save the document into memory in an external format. Available file formats are represented by the FileExportFormatEnum enumeration constants. There is a limitation: the document cannot be exported into memory in XLS format.

IFileWriter interface is implemented for a file writing stream. The pointer to IFileWriter interface is an input parameter of IFRDocument::ExportToMemory method. This interface and all its methods are implemented on the client side.

LOAD FROM MEMORY METHOD IN OUTPROC

IFRDocument::AddImageFileFromStream method opens an image file from the input stream implemented by the user, and adds the pages corresponding to the opened file to the document. This method differs from the AddImageFileFromMemory method in that it can be used when the Engine object is created using the OutprocLoader object.

IReadStream interface is implemented for a read stream. The pointer to IReadStream interface is an input parameter of IFRDocument::AddImageFileFromStream method. This interface and all its methods are implemented on the client side. A read stream may be implemented as reading from file.

POSSIBILITY TO ENABLE AND DISABLE INTERPOLATION IN PDF VIEWERS

Interpolation in PDF viewers can insignificantly affect the visual quality of PDF file. A new property IPDFPictureCompressionParams::EnableInterpolationMode allows to disable interpolation in PDF Viewers. The property has tree modes: TSPV_Yes, SPV_No and TSPV_Auto. Note that if the IPDFExportParams::PDFAComplianceMode is set to PDF/A, interpolation will be always disabled as it is required by specification of PDF/A format.

The default value of this property is TSPV_Auto, which means that the interpolation will be turned off for PDF/A-compliant formats and on otherwise.

NEW PROPERTY IENGINE::AVAILABLEPREDEFINEDLANGUAGES

New property IEngine::AvailablePredefinedLanguages returns the collection of predefined languages that are available under the current license.

NEW METHOD ONCHANGEBLOCKTYPE IN VISUAL COMPONENTS SAMPLE

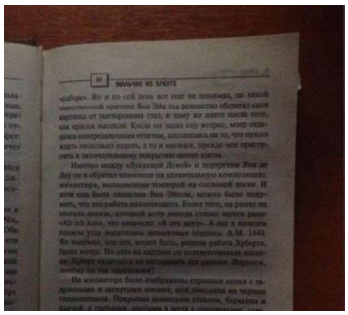
The method OnChangeBlockType must be implemented on the client side. It is called by ABBYY FineReader Engine after the block type has been changed in Image Viewer or in Zoom Viewer synchronized with Image Viewer. It allows you to cancel the type change.

The block type can be changed via the block properties toolbar or popup menu, or indirectly, by adding table separators to a block which previously was of non-table type.

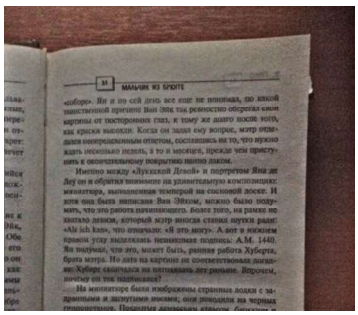
NEW PROPERTY FOR SHADOWS AND HIGHLIGHTS CORRECTION IN PHOTOGRAPHS

IPagePreprocessingParams:: CorrectShadowsAndHighlights property was added in this release. This property allows correcting excessive shadows and highlighting during image preprocessing. This property is designed for use with photographs only.

Three states are available: TSPV_Yes, TSPV_No and TSPV_Auto. By default the property is set to TSPV_Auto.



Before



After

SUPPORT OF FARSI

From this release Farsi language is supported. It is added to the list of Predefined Languages. Win32 standard language identifier is equal to 1065.

The language is available, if Arabic module is included in license. Please note that as of now, dictionary support for this language is not available.

NEW PROPERTY IHTMLEXPORTPARAMS::USECSS

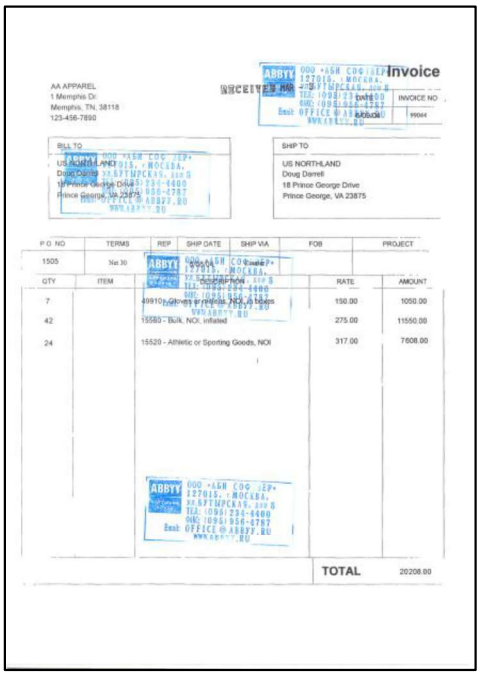
This property determines if a separate style sheet file (.css) is created. In previous releases style sheet file was always created. Now it is possible to use built-in style sheet file by setting IHTMLExportParams::UseCss to FALSE.

The default value of this property is TRUE.

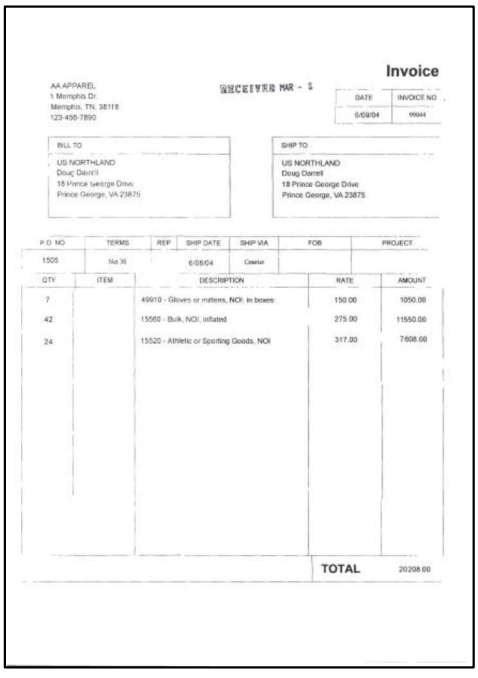
POSSIBILITY TO IMPROVE RECOGNITION QUALITY BY REMOVING COLOR OBJECTS BEFORE RECOGNITION DURING PREPROCESSING STAGE

This feature can be useful for documents with black text and white background that contain colored elements (for example, stamps) that don't need to be recognized.

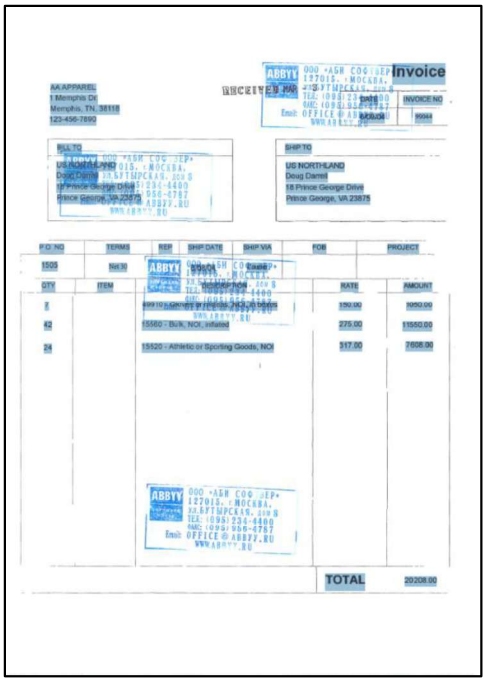
New property IPageProcessingParams::ProhibitColorObjectsAtProcessing allows filtering out color objects on the image before layout analysis and recognition. After processing is complete the color objects can be put back on the image again:



1.Input document contains color objects



2.Color objects are ignored during processing



3.Color objects are restored in export result

If this property is set to FALSE, the ColorObjectsProhibitingParams property is ignored. The default value of this property is FALSE.

A new ColorObjectsProhibitingParams object has been added. It is used for tuning parameters of filtering out the color objects on the image before starting processing. This kind of preprocessing can be useful in cases when the document to be recognized has color stamps, signatures etc., which can reduce recognition quality. The parameters are only taken into account if the ProhibitColorObjectsAtProcessing property is set to TRUE.

It is possible to specify in properties of this object the following parameters:

- the color which must replace the removed color objects
- the collection of the hues of the objects which must be filtered, in HSL representation.
- if, after processing is complete, the color objects must be put back on the image again.

A new property IPageProcessingParams::get_ColorObjectsProhibitingParams returns a ColorObjectsProhibitingParams object.

Another way to improve recognition quality by removing color objects is to use IImageDocument::RemoveColorObjectsEx method, added in previous release, but it doesn't allow restoring color objects on the image again before export.

POSSIBILITY TO REPLACE BLACK OR WHITE COLOR OF EXPORTED PNG IMAGES WITH TRANSPARENT

From now on it is possible to replace black or white color of exported PNG images with transparent:

A new object PngExtendedParams was added. This object provides functionality for tuning the parameters of saving a black-and-white image to PNG format (IFF_Png format) using the IImage::WriteToFile method.

To replace the color with transparent it necessary to specify the color in IPngExtendedParams::TransparentColor property. Only black and white colors are currently supported.

The default value of this property is -1, which means that no color will be replaced with transparent color.

NEW METHOD IENGINE::CREATEMULTIPAGEIMAGEWRITEREX

The method IEngine::CreateMultipageImageWriterEx allows to set extended parameters of image saving (JpegExtendedParams, PngExtendedParams or TiffExtendedParams) when creating the MultipageImageWriter object.

NEW ATTRIBUTE 'ROTATION' IN XML EXPORT SCHEME

New attribute 'rotation' in 'page' tag defines the type of rotation applied to original page image before processing. It can have one of the following values: Normal, RotatedClockwise, RotatedUpsideDown, RotatedCounterclockwise.

NEW PROPERTY IRTFEXPORTPARAMS::KEEPPAGEBREAKS

IRTFExportParams::KeepPageBreaks property specifies if the page breaks must be retained in the output RTF document. (HelpDesk request #433300)

NEW PROFILE FOR SPEED UP OF BARCODE RECOGNITION

New profile BarcodeRecognition_Speed was added in this release. It enables fast barcodes extraction.

New BarcodeRecognition_Accuracy profile is equivalent to the BarcodeRecognition profile available in previous releases.

In some cases BarcodeRecognition_Speed speeds up the processing almost by 2 times. However, it can decrease the recognition quality. Below you can see the changes in results of processing with the

BarcodeRecognition_Speed profile compared to the BarcodeRecognition_Accuracy profile for some types of barcodes.

Barcode type	Speed up in **BarcodeRecognition_Speed** profile	Lost in quality in **BarcodeRecognition_Speed** profile
1D Barcodes, Code 128	14%	10%
1D Barcodes, Code 93	73%	0%
1D Barcodes, EAN 8	29%	12%
1D Barcodes, UPC-E	116%	0%
2D barcodes, Aztec	59%	50%
2D barcodes, MaxiCode	94%	37%

Tests were run on the machine with following configuration: CPU - Intel(R) Core(TM) i5-3450 CPU @ 3.10GHz, Memory - 2.0 Gb.

NEW SECTION IN DEVELOPER'S HELP "PREDEFINED PROFILES SPECIFICATION"

The new section contains a full list of all settings used by ABBYY FineReader Engine predefined profiles.

THE CHANGING OF THE GUI FORMS HEIGHT OF SOME SAMPLES

The height of the main form of Image Preprocessing sample didn't entirely fit on the screen with small resolution. A scroll has been added to the main form of Image Preprocessing sample, and now it fits to the monitors with small display size.

The heights of GUI forms of BCR, Camera OCR and samples were adjusted to fit the screens with vertical resolution equal to 800 pixels.

SUPPORT OF CORRUPTED TIFF FILES OPENING

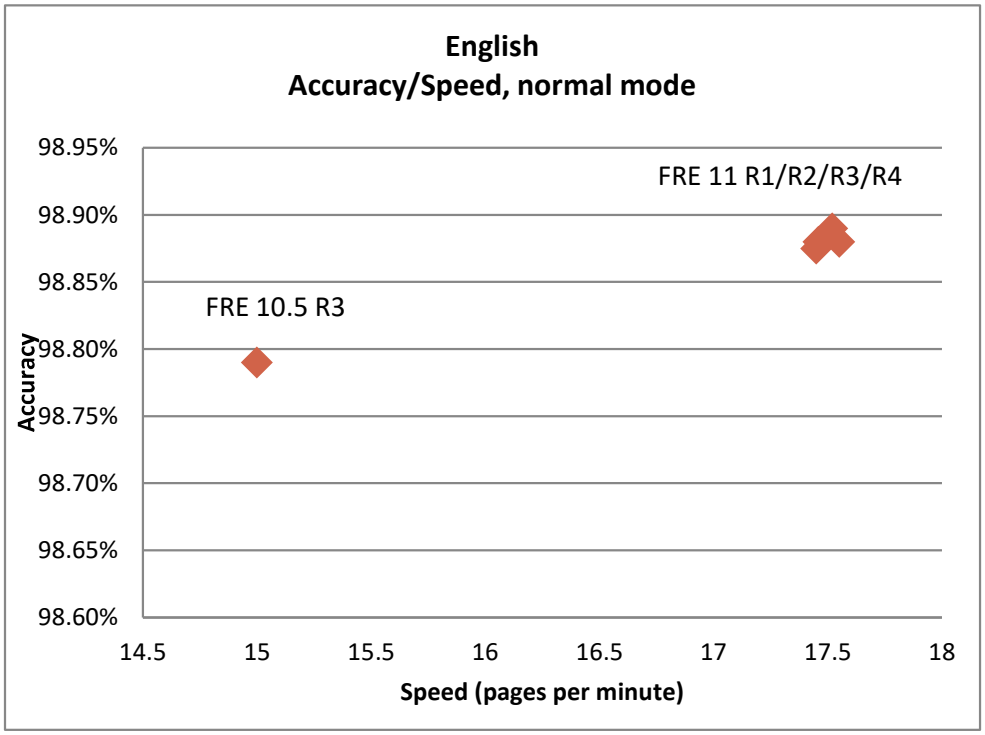
Starting with this release, FineReader Engine can open corrupted TIFF files. It can be done only if one last line is corrupted, otherwise an error occurs and the corrupted file is not opened.

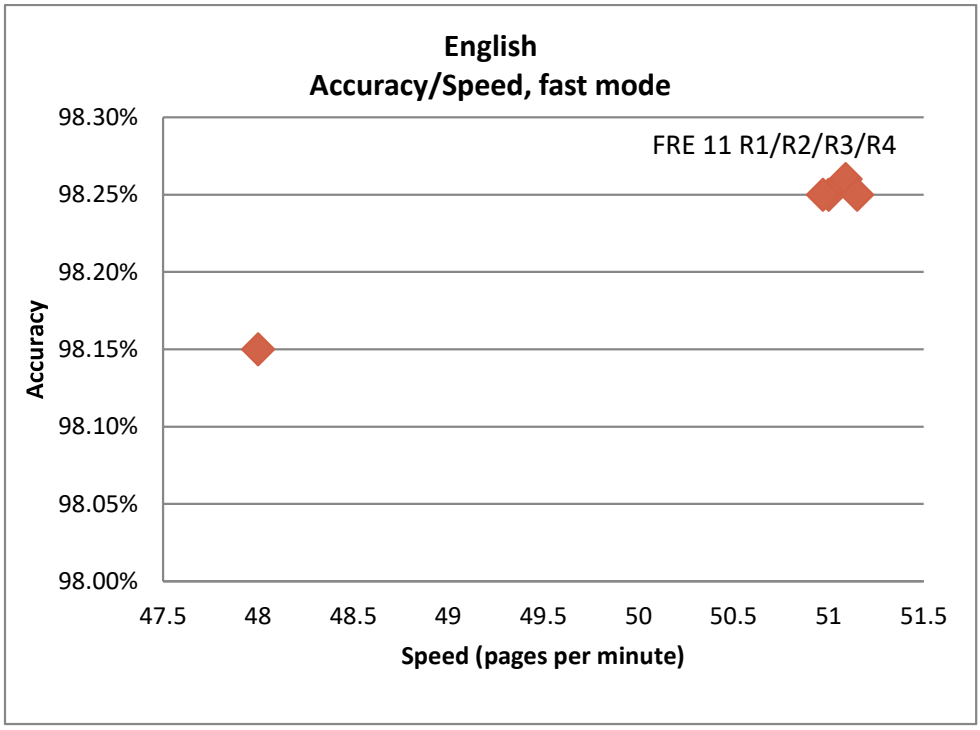
If the TIFF image which has been opened is corrupted, a warning message containing the number of the damaged page in the image file will be shown. (HelpDesk request #344473)

PERFORMANCE RESULTS

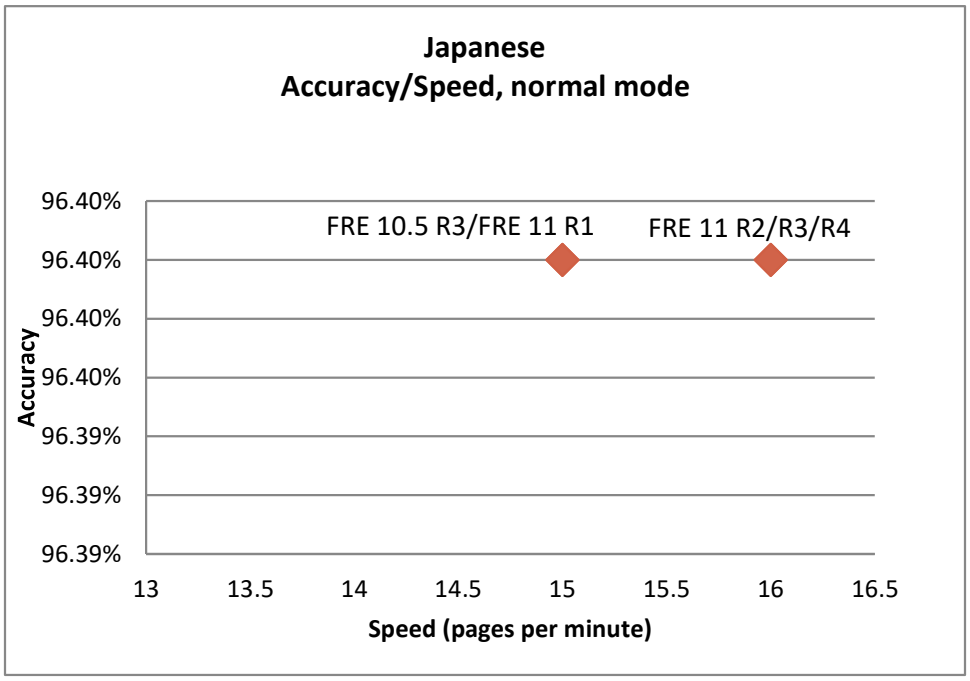
This section contains performance results of FRE 11 R4 comparing to the previous releases and the latest version of FRE 10.5. The processor of the testing machine is Intel® Core™ 2 Duo CPU E6750 (2.66GHz, 2 physical cores) with 3,9 GB of RAM.

ENGLISH

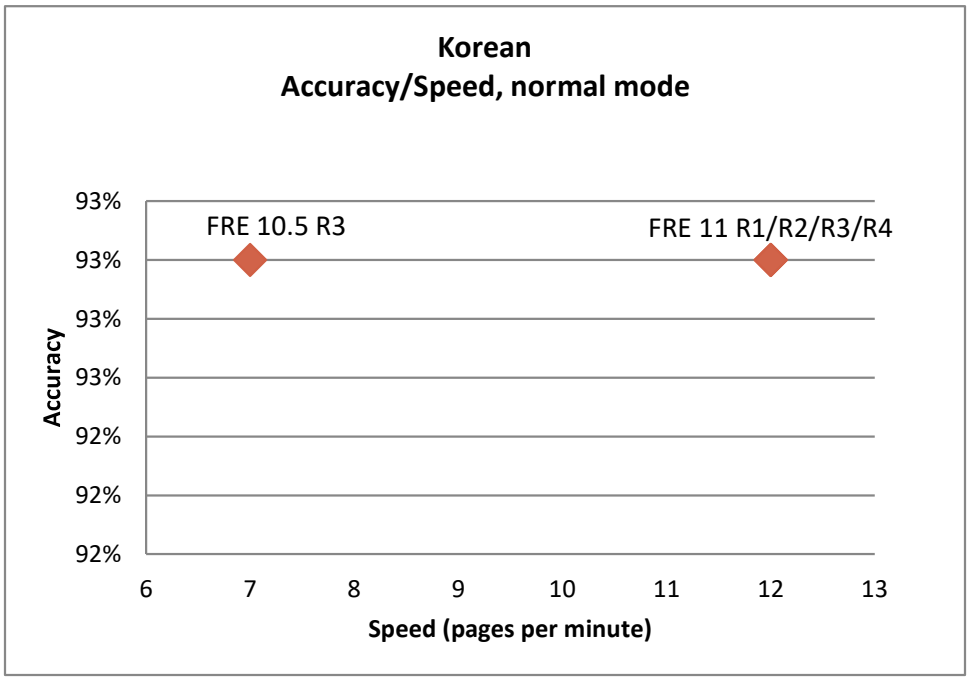



English
Accuracy/Speed, fast mode
98.30%
98.25%
98.20%
98.15%
98.10%
98.05%
98.00%
Accuracy
FRE 11 R1/R2/R3/R4
47.5
48
48.5
49
49.5
50
50.5
51
51.5
Speed (pages per minute)

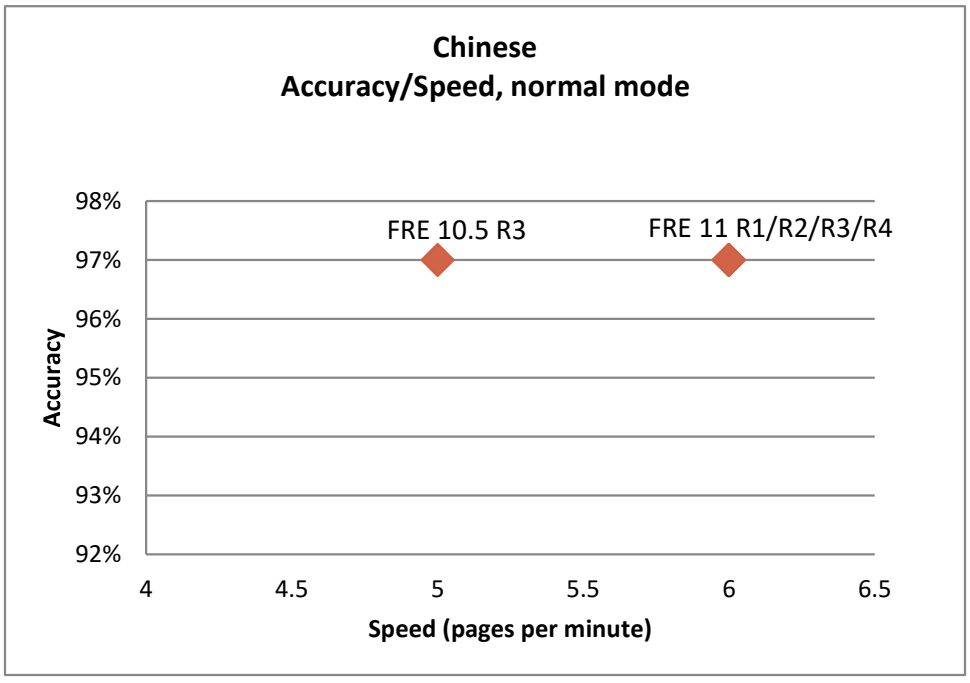
JAPANESE


Japanese
Accuracy/Speed, normal mode
96.40%
96.40%
96.40%
96.40%
96.39%
96.39%
96.39%
Accuracy
FRE 10.5 R3/FRE 11 R1
FRE 11 R2/R3/R4
13
13.5
14
14.5
15
15.5
16
16.5
Speed (pages per minute)

KOREAN



CHINESE



FIXED BUGS

This section contains a list of bugs reported by customers that have been fixed.

Four-point scale will help you to evaluate the severity of each issue, enabling you to make informed decision on how important updates are for your system.

Critical	A bug that causes crashes or hangings of software. Critical bugs can include access violations, internal program errors, stack overflow, out of memory or other exceptions that can lead to program failure.
Major	A bug that does not cause program failure but affects major functionality of a feature or impairs the system's performance. Major bugs can include disparity of the feature functionality to the internal specifications, memory leaks or data corruption.
Minor	A bug that leads to feature malfunctioning or affects minor functionality of the software. Minor bugs can include recognition errors, missing or lost objects, wrong color detection, incorrect document analysis, license counter errors, etc.
Trivial	A cosmetic issue that does not affect the functionality of the product but can cause inconveniences. Trivial bugs can include Help file errors, log errors, incomplete information in error messages, etc.

The following table contains bugs fixed in this release sorted in descending order of severity. If the bugs have workarounds, root causes or side effects, they will be mentioned in the Description section.

Severity	Description	Subsystem	HD #	Office
Critical	Error "Page 0 of the image file cannot be opened due to the following error: Not enough memory! Page numbering starts with 0" during adding of PDF files to FRDocument	API	412723	RU
Critical	Access violation during opening of a corrupted file.	Image	445991	3A
Critical	During processing of 47 page document IPE:.\src\ProcessorsCallsHandler.cpp, 74. occurs during IFRDocument::Preprocess and IFRDocument::Analyze stages.	API	443163	US
Critical	E_OUTOFMEMORY during synthesis stage. A multipage document is processed.	API	431135	EU
Critical	Access violation on method IRecognizerParams::SetTextLanguage. Java language is used in project.	API	440006	EU
Critical	IPE: .\src\ProcessorsCallsHandler.cpp, 74. during processing of	Document	429750	EU

	specific tiff files with default settings.	Analysis		
Critical	IPE:.\Src\KeyValuePageGenerator.cpp, 917. During processing of PDF file with default settings.	Document Analysis	436388	EU
Critical	IPE: .\src\languages.cpp, 257 occurs during export. All image blocks of a document are replaced by the text block. Document is exported to PDF in TextOnImage mode.	Export	433170	US
Critical	JPEG image is recognized with default settings and exported to PDF. IPE:.\Build\13.0.14\0\PdfTools\PdfToolkit\Inc\PdfToolkit.Types.inl, 283. occurs during export.	Export	435031	EU
Critical	IPE:.\Src\OutParagraph.cpp, 58. during synthesis stage in a specific usage scenario.	Synthesis	418444	EU
Critical	IPE:.\Src\KeyValuePageGenerator.cpp, 1269. during analysis of specific image.	Document Analysis	430857	EU
Critical	IPE:.\Src\Fonts\FontDescriptorImpl.cpp, 107 during export to PDF while using BatchProcessor.	Export	430298	US
Major	All XLS and XLSX produced by FRE 11 are not indexed in Windows Search.	Export	429237	US
Major	A significant slowdown during sequential processing of large multipage documents (200 pages and more).	Image	430252	EU
Major	The issue is reproduced after the recognition with methods of IEngine and IDocumentAnalyzer objects, developed only for one-page documents processing (e.g. IEngine::ProcessPage, IDocumentAnalyzer::PreprocessAnalyzeRecognizePage or IDocumentAnalyzer::RecognizePage). After the recognition IWords collection is empty and IWords collection properties are not filled up, IWordRecognitionVariants and CharacterRecognitionVariant collections return NULL.	API	419443 421025 436055	US
Minor	After processing of a specific multipage document with BatchProcessor and with settings IRecognizerParams::TextLanguage = "English,Japanese" IPDFExportFeatures::FontEmbeddingMode = FEM_Embed text layer in exported PDF file contains only “?” symbols. **Workaround**: the problem occurs only for multipage documents, the workaround is to export document page by page	Export	445547	US

Minor	The number of pages in input file is 40 and the output RTF document contains 38 pages. **Root cause**: Page breaks weren't retained in the output document. New property IRTFExportParams::KeepPageBreaks is added.	Synthesis	433300	US
Minor	Lost separator in export results to DOCX.	Export	406089	US
Minor	Error in validation of exported PDF/A-1 document in Adobe Acrobat Preflight "Indirect object "endobj" keyword not followed by an EOL marker".	PDFToolkit	437768	US
Minor	Bold font style wasn't detected on a specific image.	Synthesis	422183	EU
Minor	Only capital letters are recognized on specific image.	Recognizer	437944	US
Minor	First paragraphs are not detected on the specific documents with IObjectsExtractionParams::SourceContentReuseMode = CRM_ContentOnly	Recognizer	398687	RU
Minor	Text layer of output PDF file is not selected correctly Adobe Reader. Recognition languages are ChinesePRC and English.	TextRendering	381998	EU
Minor	CJK text string with vertical orientation is not detected on some images.	Document Analysis	437555	US
Minor	Empty page is detected as image block. Document analysis takes a lot of time.	Document Analysis	426809	EU
Minor	The first line in Japanese is not recognized in a specific document. **Workaround:** To set IPageAnalysisParams::EnableTextExtractionMode to true.	Recognizer	444511	US
Minor	Orientation of QR-code is not detected while recognition.	Barcodes	421513	US
Minor	PDF417 barcode is not found on the image.	Barcodes	417110	RU
Minor	Extra spaces during recognition of MICR E13B text on checks.	Recognizer	425106	US
Minor	During processing with BatchProcessor document fonts are detected as Default Metric Font which is not true.	API	427765	US
Minor	The coordinates of ", " symbol are not correct.	Recognizer	426877	US
Trivial	In Help BitmapBitsFormatEnum values are MIF_BlackAndWhite, MIF_Gray and MIF_Color. The correct values are	Help	438707	US

	BBF_BlackAndWhite, BBF_Gray and BBF_Color.			
Trivial	IFRPage::CorrectResolution() is on Help file that is not available in FRE 11.	Help	438707	US
Trivial	Misprints in ABBYY FineReader Engine 11 and 8.0/8.1/8.5 Compatibility and in ABBYY FineReader Engine 11 and 9.0/9.5 Compatibility in Help	Help	439554	RU

KNOWN ISSUES AND WORKAROUNDS

SOME API IS NOT IMPLEMENTED

The following API is not implemented in FRE 10 and FRE 11:

- IFootnoteSeries::HasSeparator. Always returns “true”.
- ITextPicture::ColumnNumber. Always returns “0”.
- ICharParams::IsWordStart. Always returns “false”. It is true only for character parameters got through IWordRecognitionVariants interface.
- IIncut::TextWrapping. Always returns “TW_Undefined”.
- IRunningTitlesSeriesText::HasSeparator. Always returns “false”.

The implementation is not planned.

THE TEXT DOESN’T FIT THE SIZE OF CELLS DURING EXPORT TO XLSX.

The text doesn’t fit the cells when it is exported to XLSX in ExactCopy mode.

WRONG DETECTION OF FOOTERS AND HEADERS

In some cases extra footers and headers are detected on the processed documents.

INJECTTEXTLAYER METHOD WORKS INCORRECTLY ON SOME JAPANESE IMAGES

New IFREngine::InjectTextLayer methods that processes the input PDF file and creates and injects he text layer created from the recognized text in a searchable PDF file has a shortcoming. On some pictures with Japanese text the injected text layer contains wrong characters.

IPDFMRCPARAMS::MONOCHROMETEXT DOESN'T WORK CORRECTLY

Different algorithms of compressions during export to PDF are used with IPDFMRCParams::MonochromeText set to TRUE. (HelpDesk request 416986)

ERRORS DURING OPENING OF PDF FILE

Unknown errors during opening of PDF file. (HelpDesk requests 414136, 395847)

SMALL DISPLACEMENT OF THE TEXT RECTANGLE IN PDF FILES

The selection rectangle around a text line in exported PDF files is slightly shifted down (relative to text symbols).

PDF/A VALIDATION REPORT

The following issues are detected by Adobe Acrobat 11.0.9 (Preflight 11.0.9) for PDF/A files produced by this release of FRE 11:

1. Adobe Acrobat rarely detects an error for exported PDF/A files "Text cannot be mapped to Unicode". Exported files don't pass validation.

2. Adobe Acrobat rarely detects an error for exported PDF/A -1a files "Syntax problem: Array with more than 8191 elements The issue is reproduced on files with a lot of pages. Exported files don't pass validation.

3. Adobe Acrobat detects an error "Text is mapped to Unicode Private Use Area but no ActualText entry is present" for exported PDF/A-2a и PDF/A-3a in the scenario of conversion from PDF to PDF/A with SourceContentReuseMode set to CRM_ContentOnly.