

R5 GM –

PART NUMBER, BUILD NUMBER

Part#	1041/50
Build#	11.1.10.100

NEW FEATURES AND IMPROVEMENTS

EXPORTING TO ALTO UP TO VERSION 3.0

It is possible to export OCR data into ALTO format according to the following ALTO standard versions:

- 2.0
- 2.1
- 3.0

The default version is 2.0, same as it was in the previous release.

MEMORY SAVING IN CASE OF NO NEED IN COORDINATES ON ORIGINAL IMAGE

Instruction `IPrepareImageMode::KeepOriginalCoordinatesInfo = false` tells the Engine not keeping image transformation matrix required for backward object coordinates calculation used for getting coordinates on original (source) image.

If there is no need in keeping the transformation data, it helps to preserve storage and memory space. For example, during processing of b/w images (~100Kb) the transformation data could be up to 1Mb per image.

SPEEDING UP MULTI-PAGE IMAGE OPENING

Starting from this release the Engine opens multi-page documents using available Engine processors as well as it uses them for analysis, recognition and exporting stages. This functionality is available for the following image opening methods:

- `AddImageFile`
- `AddImageFileFromMemory`
- `AddImageFileFromStream`
- `AddImageFileWithPassword`
- `AddImageFileWithPasswordCallback`

New functionality brings up to 2 times speed up (see tables in this section below) for image opening step in 2 and 4 core configurations.

Table 1 Processing time reduction with parallel image opening comparing to sequential opening, 2 cores

2 cores	Pages in a document					
	2	3	5	10	30	100
PDF b/w	-80%	-72%	-75%	-76%	-76%	-74%
PDF color	-78%	-65%	-68%	-73%	-73%	-76%
TIFF b/w	-91%	-88%	-90%	-90%	-88%	-88%
TIFF color	-86%	-87%	-88%	-88%	-88%	-84%

Table 2 Processing time reduction with parallel image opening comparing to sequential opening, 4 cores

4 cores	Pages in a document					
	2	3	5	10	30	100
PDF b/w	-80%	-80%	-80%	-75%	-85%	-83%
PDF color	-78%	-76%	-77%	-82%	-84%	-84%
TIFF b/w	-93%	-88%	-91%	-90%	-89%	-88%
TIFF color	-68%	-90%	-91%	-92%	-92%	-91%

CROP FUNCTION SUPPORTS GREYSCALE AND B/W IMAGES

Starting from this release it is possible to run `ImageDocument::CropImage()` function on greyscale and black and white images. Previously that was possible only for color images.

NEW JAVA WRAPPER FUNCTIONS FOR LOADING ENGINE ABLE TO THROW EXCEPTIONS

FRE 11 inherited Java wrapper functions that load `FREngine` object from the wrapper released with FRE 10. In case of any issue with loading the Engine those functions do not throw exceptions, instead they write to a log file or a console. FRE 11 presented more advanced Java wrapper and new methods in it are capable of throwing exceptions what is common.

In this release, we completed Java wrapper by adding the Engine loading functions mirroring similar in native API and capable of throwing exceptions instead of logging them.

Here is the list of functions added:

- `GetEngineObject`
- `GetEngineObjectEx`
- `DeinitializeEngine`
- `GetEngineInprocLoader`

- GetEngineOutprocLoader

FINE TUNING OF PAPER SIZE DETECTION

The Engine is able to detect paper boundaries on a scan automatically (PageAnalysisParams::NoShadowsMode = false, default value).

This helps to rid of garbage detection as text near borders of a scan. In some cases, this detector can fail. For example, if a scanned document contains a big dark picture it might be taken as a scanning background and removed from a document area as a scanning shadow.

To prevent such mistakes a host application may advise the Engine to limit the scanning shadow detector hypotheses by providing information on what part a source document occupies on a scan.

API provides PageAnalysisParams::PaperSizeDetectionMode for this purpose.

IMPROVED MRC QUALITY

We improved all predefined MRC modes

MINSIZE PREDEFINED MODE.

In the case of a 32-38% increase in file size, you get 6-15% faster speed and significantly better document image quality:

Old settings	New settings
	
	



等技術の防毒軟件，就可通過大部分的考驗。而繼紅色代碼之後，Nimda 利用同樣方式導致網絡通信嚴重異常。更甚的是，2003

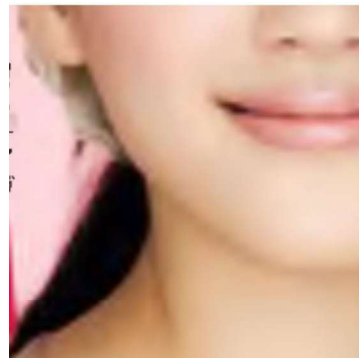
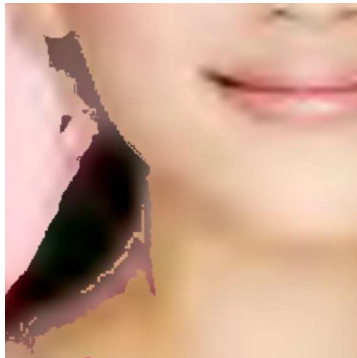
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モジュラーベルト&ハーネス	35-36
ノートパソコンとカメラのコンビ	37-40
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심리 다룬

심리를 다룬





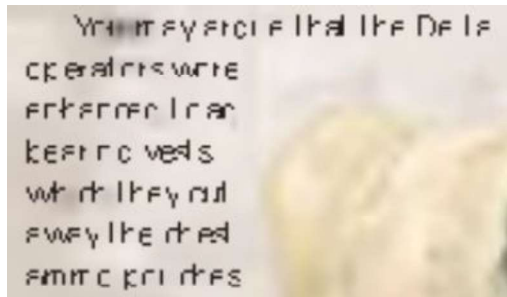
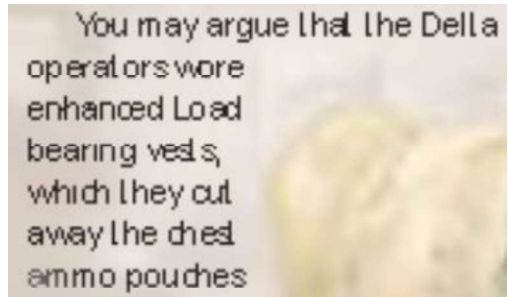
IPCC第4次報告書より
21世紀末における世界

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MAXQUALITY PREDEFINED MODE

In the case of a negligible image size increase (~0%), the new settings provide 2-11% faster speed and better document image quality:

Old settings	New settings
 <p>手工製麵包 \$56 士香濃加上手工製麵包的配 更別具一番風味的好享受。</p>	 <p>手工製麵包 \$56 更士香濃加上手工製麵包的配 更別具一番風味的好享受。</p>
<p>验。而继红色代码之后，Nimda 利用同样方 式导致网络通信严重异常。更甚的是，2003</p>	<p>验。而继红色代码之后，Nimda 利用同样方 式导致网络通信严重异常。更甚的是，2003</p>
	
<p>2 With kitchen shears, cut off leaf tips.</p> <p>3 Using a melon baller,</p>	<p>2 With kitchen shears, cut off leaf tips.</p> <p>3 Using a melon baller,</p>
<p>Adobe</p>	<p>Adobe</p>

<h1>الجيدة،</h1>	<h1>الجيدة</h1>
<h2>تحسُن وسائل</h2>	<h2>تحسُن وسائل</h2>
<p>Panopolis及Millie's Cookies 原價每盒HK\$100，優惠可作HK\$20現金使用。 *請於清單面出示此券，每張只可使用一張。 *此券只適用於香港及澳門地區。 *此券不能兌換現金或作其他用途。 *不可與其他優惠共同使用。 *Bakee! Sweets Partner Hong Kong Ltd. 保潔甜餅及糖果 總經銷商 *優惠期至2010年6月30日 查詢電話：2520 4141</p>	<p>Panopolis及Millie's Cookies 原價每盒HK\$100，優惠可作HK\$20現金使用。 *請於清單面出示此券，每張只可使用一張。 *此券只適用於香港及澳門地區。 *此券不能兌換現金或作其他用途。 *不可與其他優惠共同使用。 *Bakee! Sweets Partner Hong Kong Ltd. 保潔甜餅及糖果 總經銷商 *優惠期至2010年6月30日 查詢電話：2520 4141</p>
<p>'파리의 여자들에게선 뒤를 돌아보게 같지도 않고 진한 향수 냄새를 풍기는 투, 표정, 체형, 사고방식 등이 패션 이</p>	<p>'파리의 여자들에게선 뒤를 돌아보게 같지도 않고 진한 향수 냄새를 풍기는 투, 표정, 체형, 사고방식 등이 패션 이</p>

BALANCED PREDEFINED MODE

In the case of a 14-15% increase in file size, you get a 6-15% speed increase and significantly better document image quality:

Old settings	New settings
	
<p>are pretly damn hard impo... ble in the UK, in the states they're g</p>	<p>are pretly damn hard impo... ble in the UK, in the states they're g</p>

<p>株式会社 商品市況研究所 http://www.cmri.jp/</p>	<p>株式会社 商品市況研究所 http://www.cmri.jp/</p>
<p>モジュラーベルト&ハーネス 35-36 ノートパソコンとカメラのコンビ 37-40 ショルダーバッグ 41-45 スリングバッグ 46</p>	<p>モジュラーベルト&ハーネス 35-36 ノートパソコンとカメラのコンビ 37-40 ショルダーバッグ 41-45 スリングバッグ 46</p>
 <p>手工制作漢堡 \$56 芝士香濃加上手工夾層的飽滿，絕對是另一層美味的享受。</p>	 <p>手工制作漢堡 \$56 芝士香濃加上手工夾層的飽滿，絕對是另一層美味的享受。</p>
<p>اللجوء ريثما</p>	<p>اللجوء ريثما</p>
<p>大力水手特級漢堡 \$64 三件炸雞套餐，以鬆軟舒適、嫩滑滑滑滑滑美味；更結合伊萊閣合法食物！放心食用，加錫可加錫！</p>	<p>大力水手特級漢堡 \$64 三件炸雞套餐，以鬆軟舒適、嫩肉滑滑滑滑美味；更結合伊萊閣合法食物！放心食用，加錫可加錫！</p>
<p>Using a serrated knife, cut off the stem, and trim two inches off the top.</p>	<p>Using a serrated knife, cut off the stem, and trim two inches off the top.</p>
<p>Nowhere's where things start to get a bit more expensive in the real World. Your</p>	<p>Nowhere's where things start to get a bit more expensive in the real World. Your</p>

MAXSPEED PREDEFINED MODE

In the case of a very small increase in file size (2-8%), the new settings provide better image quality (see modes above) and noticeably faster processing speeds (30-45%).

CONVENIENT METHOD FOR GETTING RECOGNIZED WORD REGION

Many customers work with recognized words instead of recognized characters. In most of the cases, such customers need to highlight a word of matter in graphic user interface. The highlighting requires a word-bounding rectangle (region).

Since words may include characters of different height and could span several lines the task becomes non-trivial. To make it easy and facilitate our customers we added new property to IWord interface that returns a word-bounding region – IWord::Region.

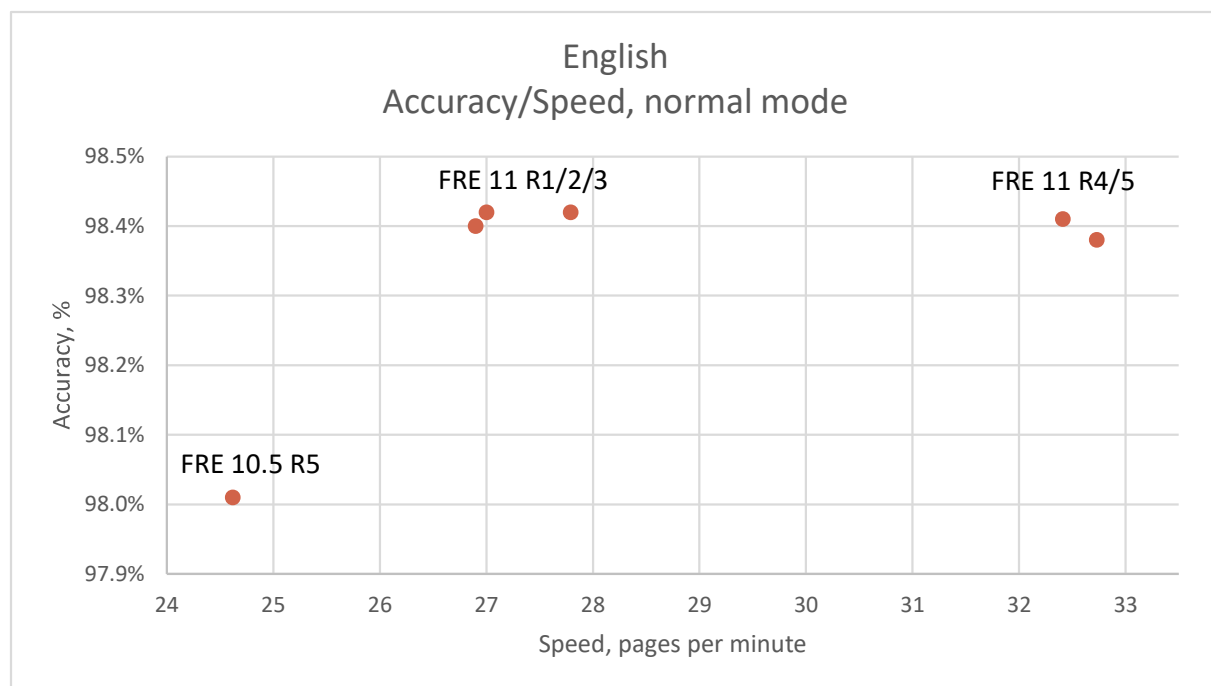
WIA 2.0 SUPPORT

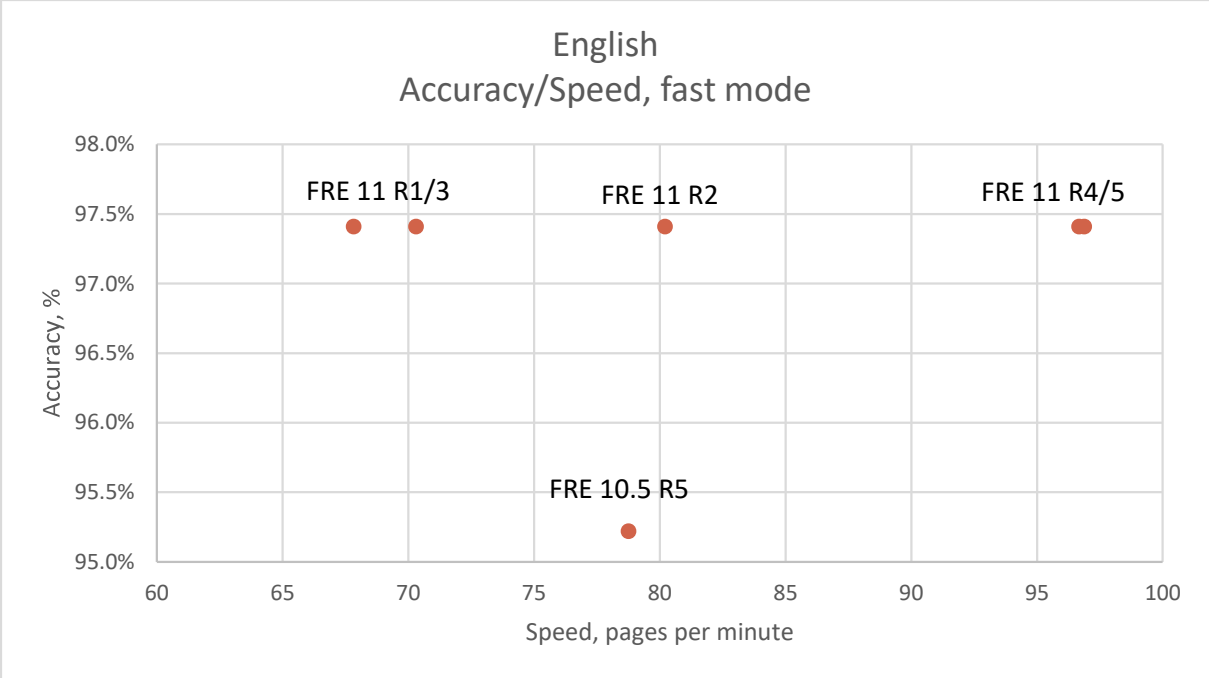
FRE 11 R5 is capable to work with scanners supporting WIA interface of version 2.0. This is the most recent version of WIA interface standard gradually substituting the previous one.

PERFORMANCE RESULTS

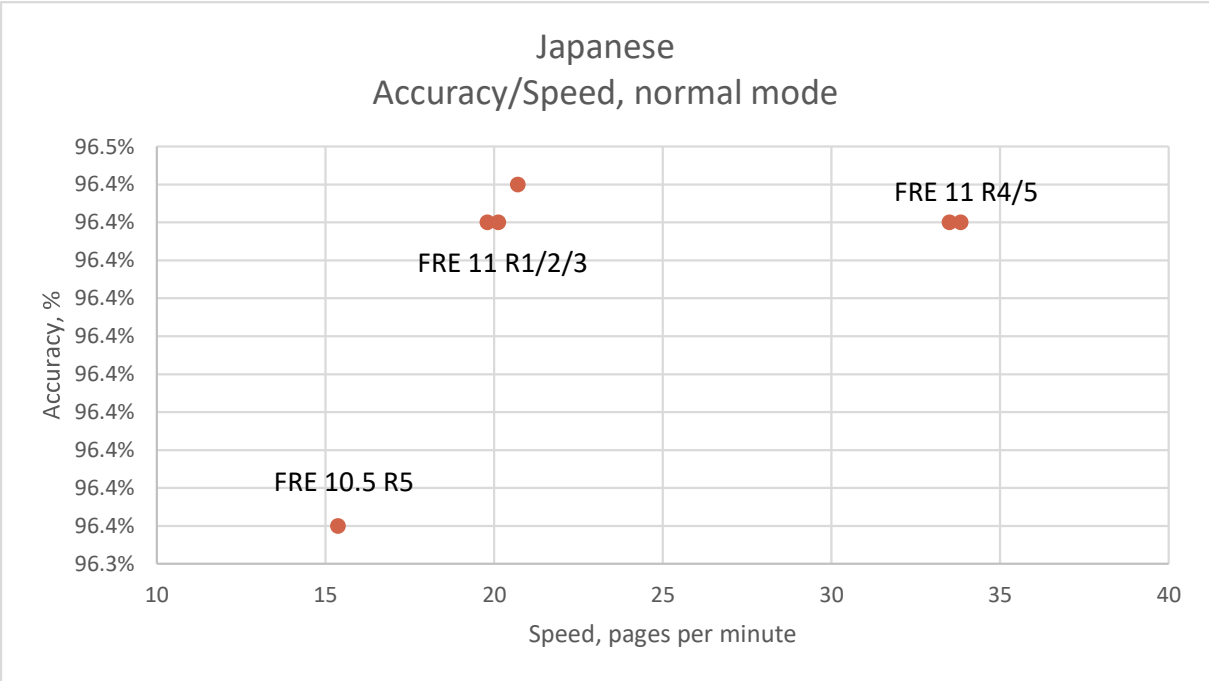
This section contains performance results of FRE 11 R5 comparing to the previous releases and the latest version of FRE 10.5. The processor of the testing machine is Intel® Core™ i5-4690 CPU (3.50GHz, 4 physical cores) with 8GB of RAM.

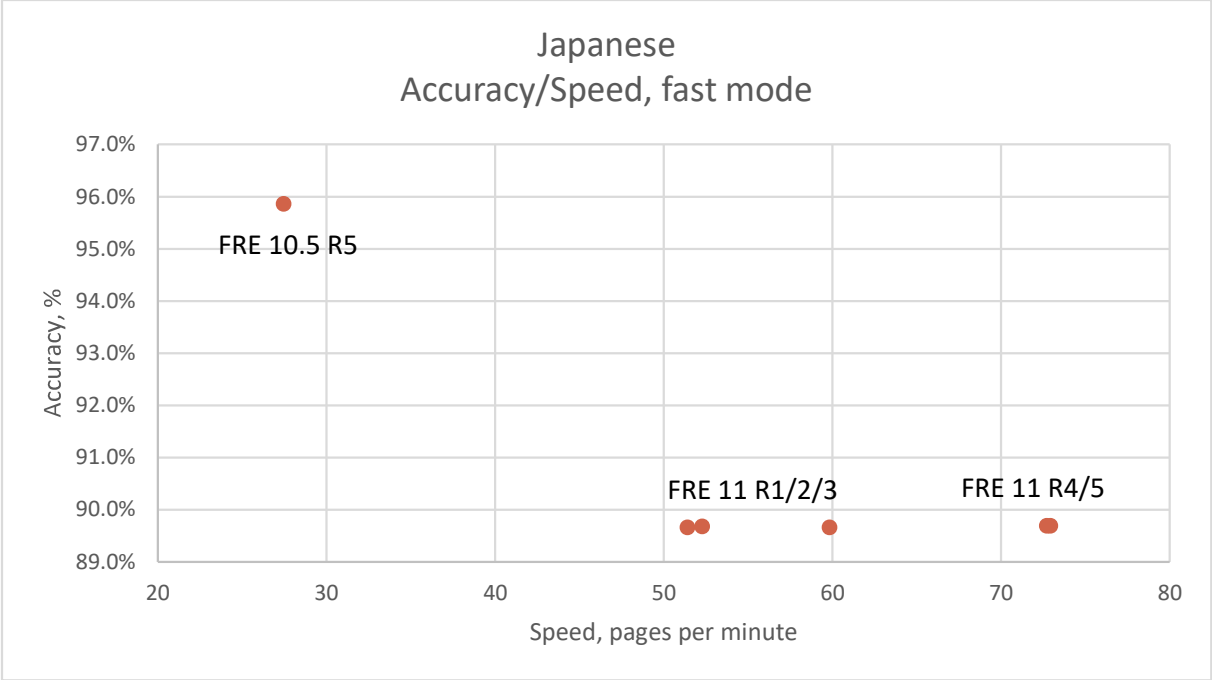
ENGLISH



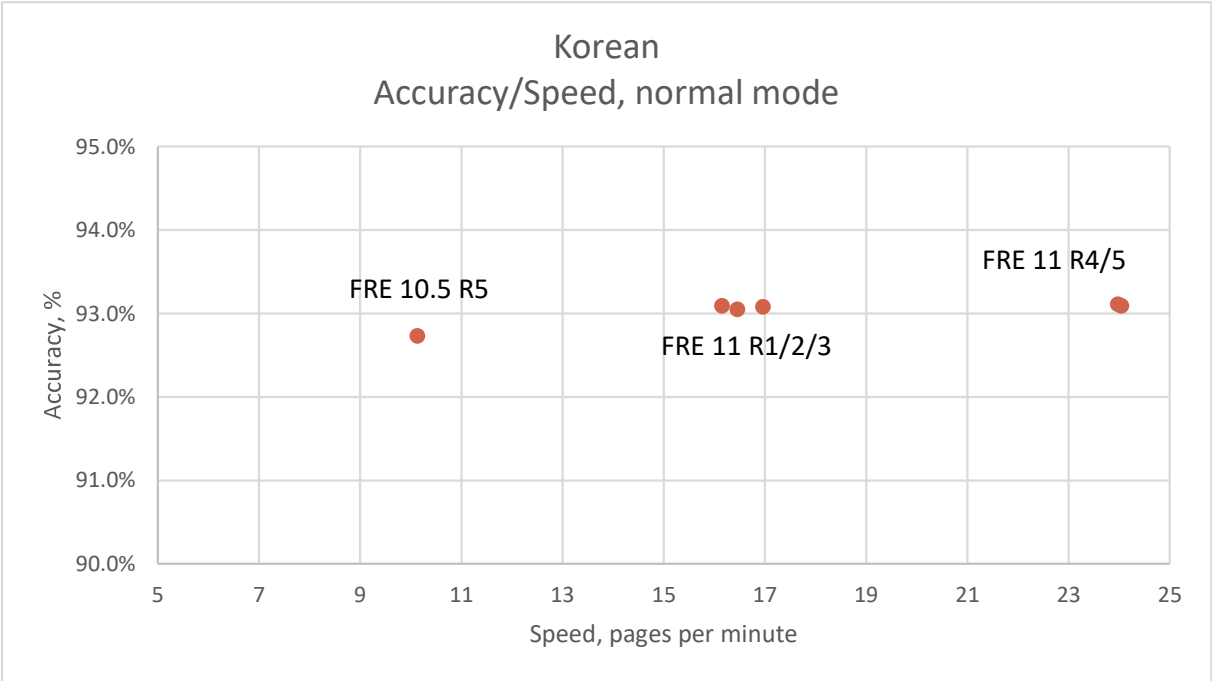


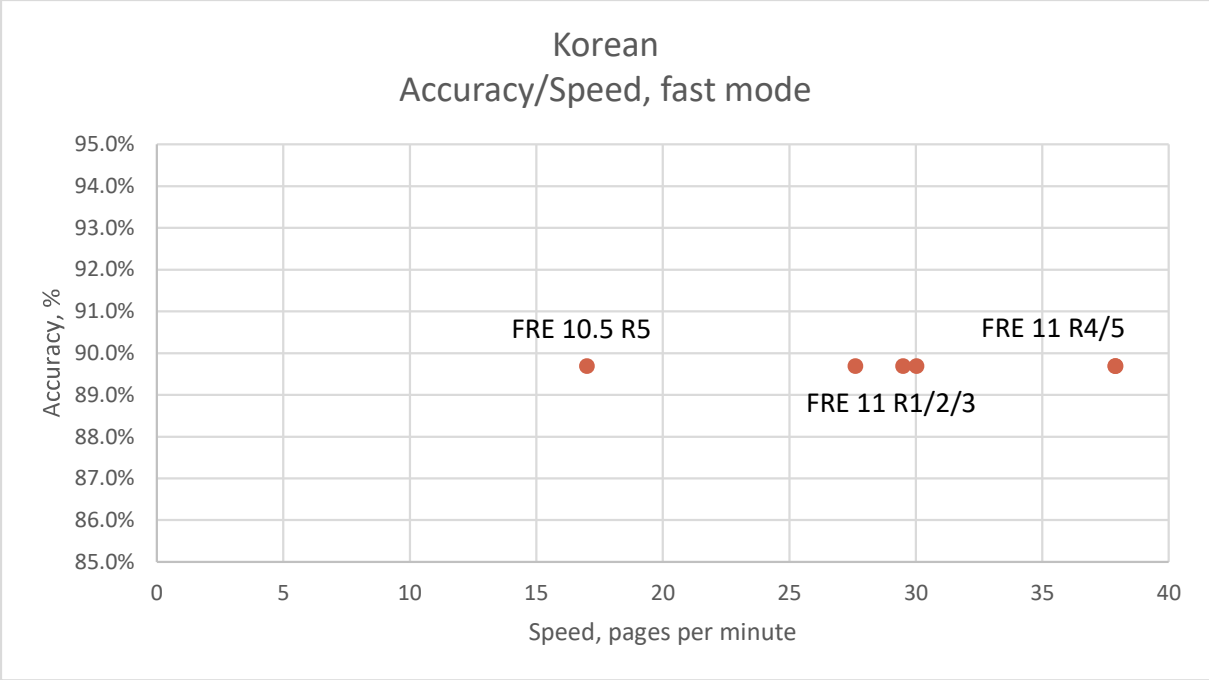
JAPANESE



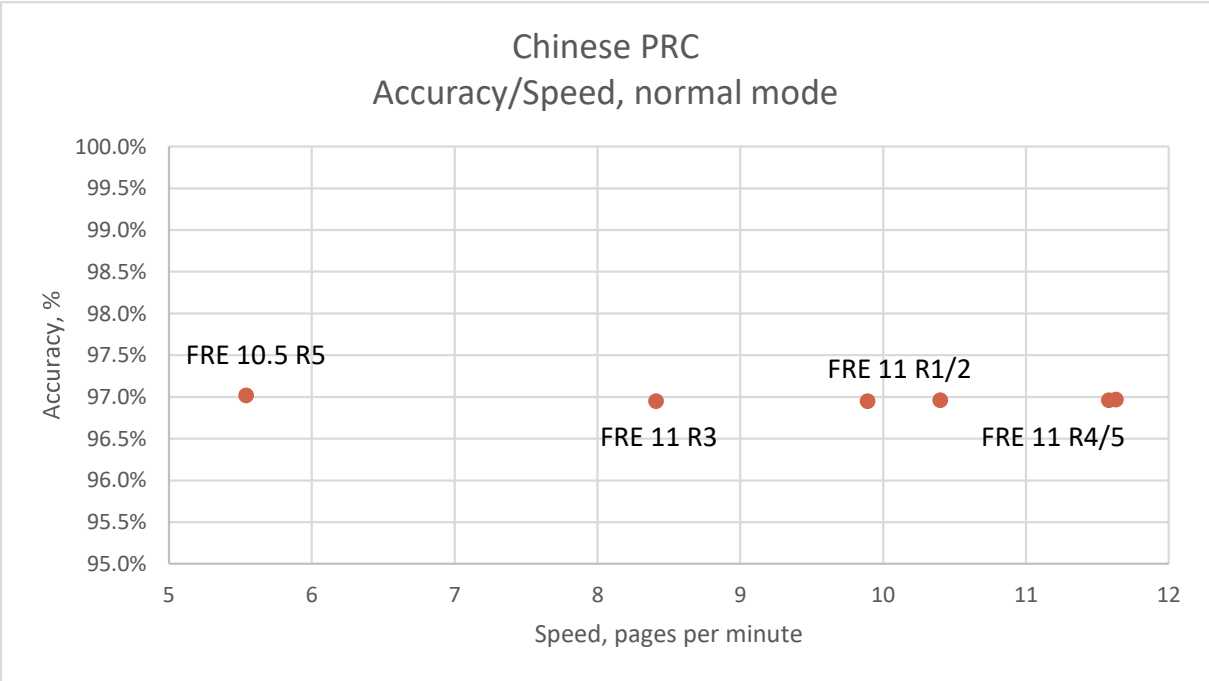


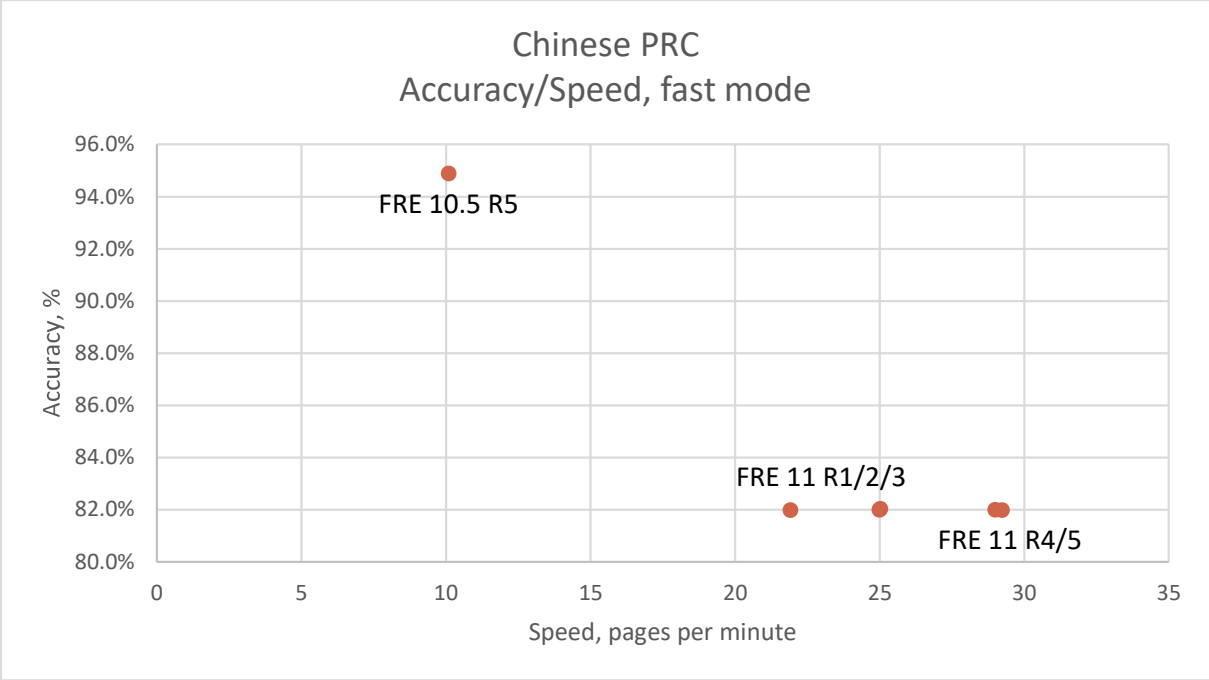
KOREAN



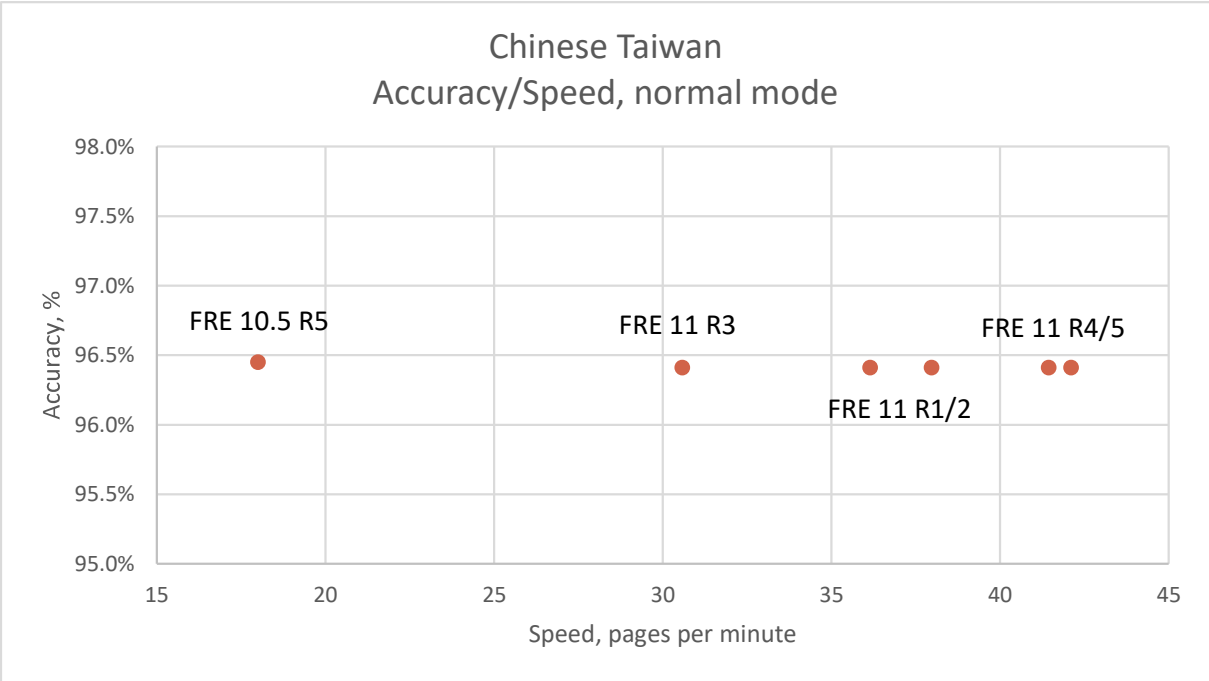


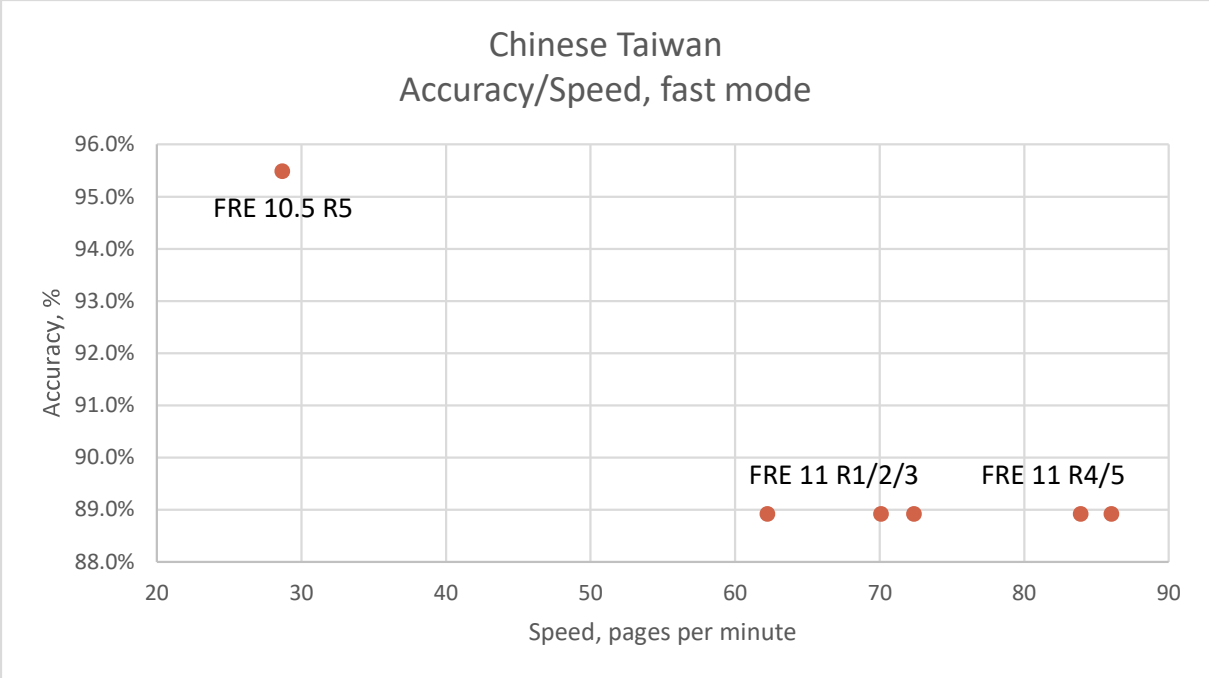
CHINESE PRC



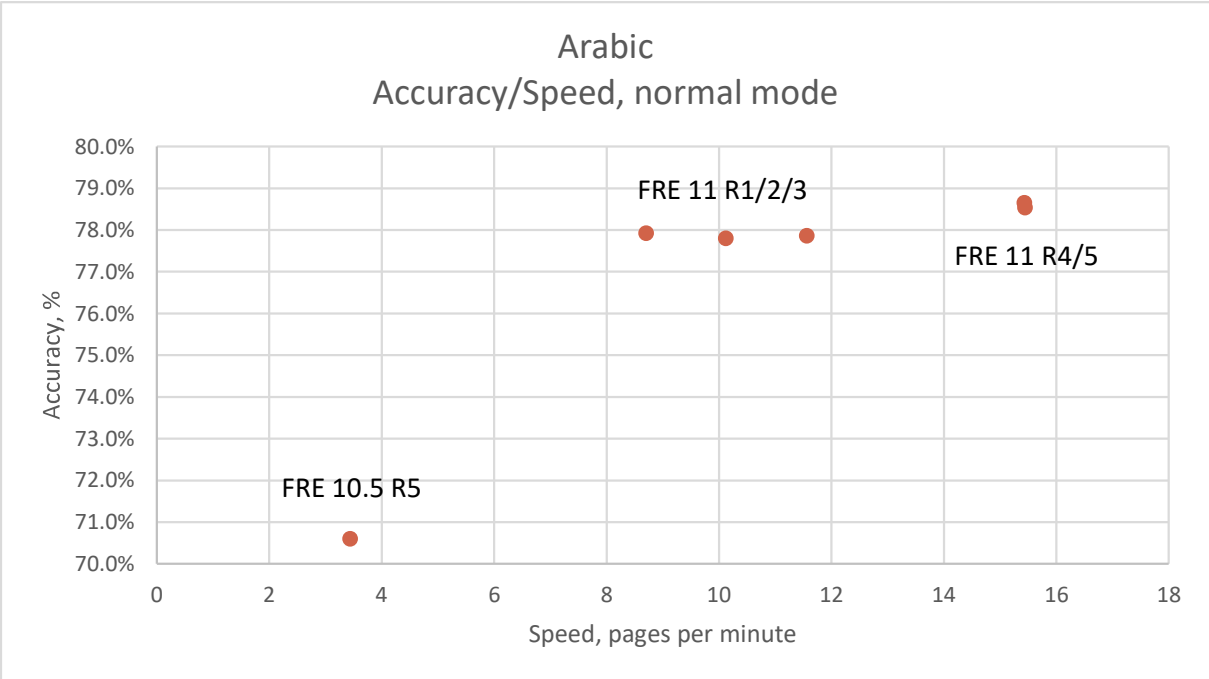


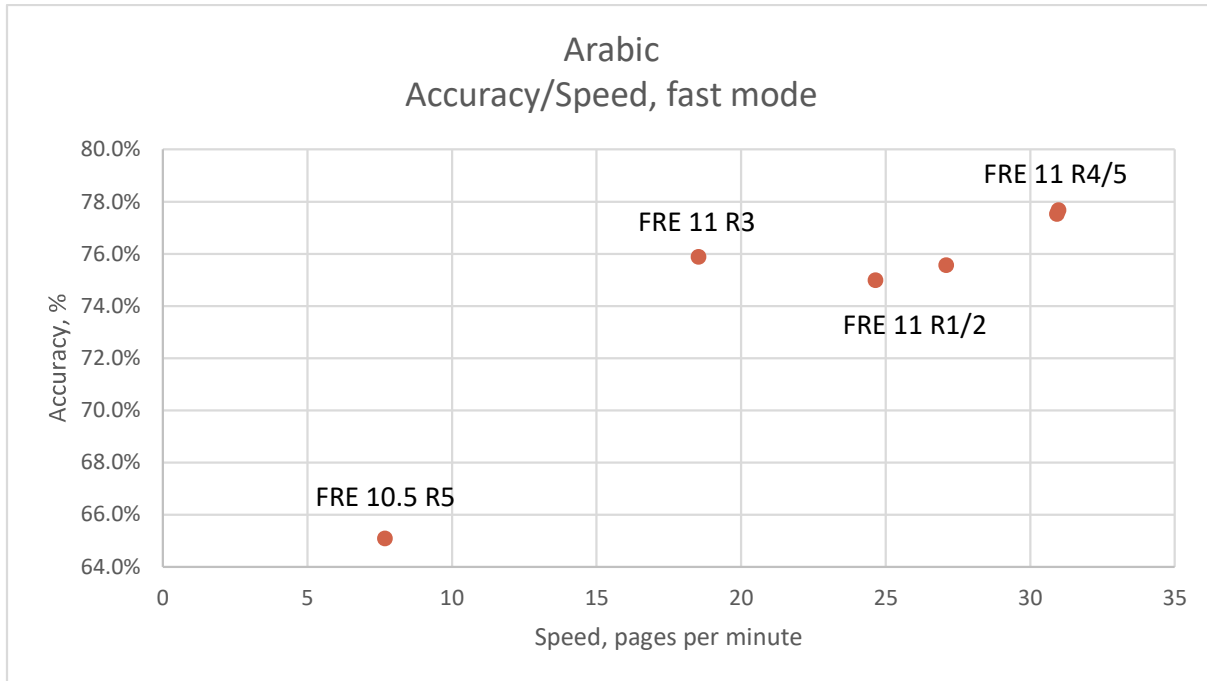
CHINESE TAIWAN





ARABIC





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	Technology Subsystem	HD #	Office
Critical	Synthesis step crashes on a customer image with the following settings: IFontFormattingDetectionParams::DetectScaling = false.	Synthesis	471624	EU
Critical	VC crashes in the following scenario: 0. Set up 'Exact Copy' MS Word export mode. 1. Add an image file. 2. Recognize. 3. Add same image file again. 4. Scroll down few pages in the Document View. 5. Recognize. Root cause: incorrect (Undo Group) object freeing in destructor.	API	452619	RU
Critical	Recognition crashes on a customer image having incorrect orientation. Text Editor component (VC) must be in 'Editable Copy' mode.	TextRendering	442908	US
Medium	After deleting a page via the context menu VC does not automatically update page numbers in the Document View component. Root cause: no code for updating.	API	458348	EU
Medium	The Engine loses IWords data in parallel processing mode, the issue is absent in sequential processing mode. Root cause: incorrect initialization of internal structures.	API	463315	EU
Medium	The Engine does not accept the following PDF export parameters same time: PVN_Version14 and PDFKL_128Bit. Root cause: invalid parameters check.	Export	458504	US
Medium	PDF export in 'image on text' mode does not ignore the setting IPDFExportFeatures::ReplaceUncertainWordsWithImage = true as stated in the product documentation. Workaround: set the setting to 'false'.	Export	465901	US
Medium	Automatic document analysis lasts very long time (few hours) on a customer image.	DA	469564	US
Minor	Manually created text block in VC has Inversion property default value equal to false. Should be 'Auto'.	API	452626	RU
Minor	The Engine throws an exception during de-initialization in a customer's scenario. Root cause: incorrect order of object freeing.	API	458518	RU
Minor	Synthesis subsystem returns text of lower height than it is on source image. Reproduced on a customer image.	Synthesis	430128	US
Trivial	The Engine does not write IFRPage::DetectOrientation (ITextOrientation) and IBatchProcessor::Start(IPageSplittingParams	API	456734	US

	*PageSplittingParams) parameters into log file.			
Trivial	Searchable text is written as visible text under foreground image.	Export	446166	US
Trivial	EnginePool sample in Java has a bug leading to a deadlock when ReleaseEngine() follows GetEngine() provided all Engine instances are busy.	Samples	459716	US

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 the 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 IPDFMRCPParams::MonochromeText set to TRUE. (HelpDesk request 416986)

ERRORS DURING OPENING OF PDF FILE

Unknown errors in APDFL library during opening of PDF several files. (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).

'USER PATTERN TRAINING UTILITY' SAMPLE CRASHES FOR 'FIELDLEVELRECOGNITION' PROFILE

Recognition command will result into IPE: "...\Interfaces\Implementations\inc\NotifyImpl.h, 62".

The fix will be available in the next release.

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:

In SourceContentReuseMode = CRM_ContentOnly the Engine sometimes (5% of the test base in Korean language) generates PDF/A-2a and PDF/A-3a files which Adobe Acrobat Preflight validates with the following message "Text is mapped to Unicode Private Use Area but no ActualText entry is present".