

Table 9: CEMDA complex file event patterns for Android 8 ©Add Asparna Ltd

Category	User Action	Foreground package	Pattern	File extensions	Notes
Create	Download Gmail attachment	com.google.android.gm, com.microsoft.office.word	CMCw	PDF, DOC DOCX	Detected package is sometimes word when downloading DOCX files.
	Capture a photo	com.sec.android.app.camera	CAtMAAtCw	JPG	
	Download WhatsApp image	com.whatsapp	MtAt, At	JPG	Temp file is created in the Shared directory and moved to the WhatsApp downloads directory
Access	Read a Word file	com.microsoft.office.word	ACnACw, ACnCw, ACwCn	DOC, DOCX	Action has different patterns depending on how the user behaves (e.g., closing the file by pushing the “back” button or pushing the “home” button).
	Read a PDF file	com.adobe.reader	ACn	PDF	
	Open WhatsApp image	com.whatsapp	ACn	JPG	
Share	Share document from Word	com.google.android.gm	ACn	DOC, DOCX	
	Attach file with Gmail	com.google.android.gm	CnA	JPG, PDF, DOC, DOCX	
Modify	Edit Word file and forward	com.google.android.gm	MMfMt	tmp → DOC, DOCX	
	Edit a photo using default editor and forward	com.sec.android.mimage. photoretouching, com.google.android.gm	CAtMCw	JPG	Photoretouching is normally seen, but Gmail is sometimes seen in addition

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Category	User Action	Foreground package	Pattern	File extensions	Notes
Create	Download Gmail attachment	com.google.providers.download	COMCw	PDF, DOC DOCX	
	Capture a photo	com.sec.android.app.camera	CAtOMCw	JPG	
	Download WhatsApp image	com.whatsapp	MtAt, At	JPG	
Access	Read a Word file	com.microsoft.office.word	OCwOACnOCw, OCwOACn	DOC, DOCX	
	Read a PDF file	com.adobe.reader	OACn,OA	PDF	
	Open WhatsApp image	com.whatsapp	OACnOCn	JPG	
Share	Share PDF file from Aodbe via Gmail	com.google.android.gm, com.adobe.reader	OCnCN, OCn	PDF	Could not be detected in 8.
	Share document from Word	com.google.android.gm	OACnOCw, OACnCw	DOC, DOCX	
	Attach file with Gmail	com.google.android.gm	OACn	JPG, PDF, DOC, DOCX	
Modify	Edit Word file	com.microsoft.office.word	MMfMt	tmp → DOC, DOCX	
	Edit Word file and forward	com.google.android.gm	MMfMt	tmp → DOC, DOCX	
	Edit a photo using default editor and forward	com.sec.android.mimage. photoretouching	CAtOMCw	JPG	