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An efficient approach to control job cancellation

This disclosure focuses on providing an enhanced job cancellation approach in printing devices.

A concept is disclosed here, wherein when a job is being processed/queued, the user is enabled to cancel printing of specific pages or a range of pages. This option thus provides a more user-controlled cancellation of the ongoing job in printing devices.

Printers are provided with a job cancel option. This option aids users to cancel the printing/queued job in case of incorrect print content, incorrect print job configuration, etc. The existing cancel option when exercised, will cancel the printing of all the remaining pages for the processing job or the entire job waiting in the print queue. In some scenarios, the user may have a need to cancel printing of some pages of the job rather than the entire job. The existing cancel option in printing devices does not provide this flexibility.

In printer firmware, the print path will have User Interface (UI), Job Manager (JM) and Print Engine (PE). Here, the UI is responsible to get the input from the user. JM is responsible to process and translate the given job into a format which Print Engine can understand. The print data for each page sent to JM will have page settings and page content. Page settings will have the print options/settings for that page like page number, paper size, simplex/duplex etc. Then finally the processed data is sent to PE for printing.

The new approach (shown in Figure #1) will provide a cancel job option to the user while the job is in processing/queued mode. Here, the user will be provided with below options.

Option #1: Cancel specific pages or a range of pages. (example: cancel pages 3, 5 and 10 of a 20 pages job, cancel pages 25 to 30 in the 80 pages job)

Option #2: Cancel the pages beyond the specific page number. (example: In 20pages job, cancel all pages from 15)

When user initiates the cancel by entering few specific page numbers in the new cancel job option (in the UI screen), the specified page numbers and the option will be sent to the JM.

JM on receiving cancel request for a page, will check whether that page is processed and sent to PE or not. If the page is not processed, then the JM will ignore processing of that page. In case it had already processed the page and sent to PE, then it will notify PE to not print this page.

PE will have couple of levels in its printing path. When a page crosses a specific limit and the requested cancel pages are already printed, then cancel will not be applicable. When PE receives a cancel page, it will check whether the page has crossed the limit to cancel or not. If the page has not crossed the limit, then it will cancel the page.

When JM receives the cancel request to cancel the job after a specified page number, JM will ignore the pages beyond the given page number. It will end the job by discarding the remaining pages in the job.

In cases where the job is launched from software, the discarding of pages can be performed at the software itself instead of sending the data to the printer.

This new approach provides a good user experience in the job cancellation flow and saves a lot of user time. This cancellation approach can be extended to other applications/products as well.
Figure #1 Represents the flow sequence of this cancellation sequence with the newly provided options.