

# EPrintCast – A Document Repository Podcast

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## ABSTRACT

In this paper, we describe a simple method of reusing an EPrints RSS2.0 feed and Dublin Core meta-data to produce a synthetic-voice podcast that includes both citation and abstract details, which can be easily added to iTunes. Rather than allocating precious time to reviewing the latest institutional releases at work, this system allows users to listen to the details of papers during unutilized time, where the eyes and hands might be otherwise engaged. Early work has already produced the podcast and upcoming work will look at automatically producing a ‘to read’ list with pre-downloaded full texts, based on track ratings given to each item.

## Categories and Subject Descriptors

H.3.7 [Digital Libraries]: Dissemination, User Issues. H.5.1 [Multimedia Information Systems]: Audio input/output.

## General Terms

Design, Experimentation, Human Factors.

## Keywords

Podcast, iPod, Audio, Repository, Publications.

## 1. INTRODUCTION

Advances in open access, Dublin-core-compliant, online document repositories means that more and more published material is becoming available. The time to find and all that material, however, is potentially adding to the workload of already busy individuals. Here we present EPrintCast: a document repository podcast, EPrintCast is a simple method of using alternative sensory input to identify and prioritize important reading material.

EPrintCast reuses text-based RSS2.0 feeds and online Dublin Core meta-data, to build audio that reads out, to the user, the citation text and abstract of documents from an open-access repository like EPrints. Below we first briefly cover some related work. Then we describe the expected scenario of use that has motivated the existing and future work. The process of creating the EPrintCast file is then described in detail. Finally, the future work for producing a personalized ‘to-read’ list is described, along with intended user studies.

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Figure 1: Sign up to the podcast, listen to the abstracts, and synchronize your ratings to get a personalized reading list.

## 2. RELATED WORK

Popular and personal technology is often considered for use in research or for alternative purposes, as it provides a familiar means of delivery to the user. The iPod, for example, has been considered for use in education [5]. Using podcasting as a method for delivery has also been shown to be valuable [3]. As part of their discussion of mobile devices, Pascoe *et al* review the requirements for using audio input and output while actually on the move, where the benefit depends heavily on the context of use [4]. Although many years of research has shown that it is harder to comprehend information by listening compared to reading [1], audio has been used in many scenarios, where the hands and eyes may be otherwise engaged, such as museum guides [2] and satellite navigation systems. Below we consider a scenario using audio for a secondary task, to utilize mundane occasions where the hands and eyes may be busy.

## 3. SCENARIO OF USE

There are many ways to find documents in a repository like EPrints, such as keyword search and cross-reference. Additionally, to keep up with the newest material, the latest additions are often listed on the repository website or provided through syndication, such as RSS feeds. Subscribing to an RSS feed supports users in two ways: 1) not having to spend the time visiting the repository website and 2) being able to review the latest additions offline. The latter, however, still requires users to have an offline device that can be used to read documents or text in transit or at locations without Internet access.

Instead of reading an RSS feed, here we present a system that allows users to listen to information about the latest repository additions. By using the auditory sense, the system allows users to assess the latest additions while traveling to work, for example. For years many people have used the audio channel during travel,

using personal music players, from the cassette walkman to recent digital audio players like the iPod.

The predicted scenario starts with a user downloading their latest podcasts before leaving for work. After synchronizing their iPod, for example, with the latest podcast content, the user sets off on their usual mode of transport, iPod ready to play music or describe the latest additions to their open repository. With their eyes and hands free, users can concentrate on their journey without missing bus stops, for example. Further, looking at digital devices is often the cause of nausea during travel.

As the user listens to their iPod, they hear the authors and publication details about the first paper, which sounds relevant to their research interests. They continue to listen and as the abstract begins they can tell that the paper will be very relevant to their current work. At the next convenient moment, they rate the item with 5 stars, out of 5. The next most recent addition is not relevant and the user can choose to skip the track using the iPod controls or wait for the next item. The third item describes some material that is partially relevant and decides that they ought to read some or all of the paper at some point, and gives it 3 stars out of 5.

When the user gets to work, having listened to all of the latest additions and some good music, they dock their iPod, which automatically synchronizes with iTunes. A simple script then checks the tracks they have listened to and finds the ratings they have assigned to each of them, including the 5 star and 3 star papers mentioned above. The script also grabs the URL of the full-texts, included in the meta-data of the podcast, and downloads the papers for the tracks that have been given a rating. The script finishes by adding the papers into a list of papers to read that have been ordered according to the priority described by the star rating. The 5 star paper, for example, gets put towards the top of the list, but the 3 star paper gets added towards the bottom. In their own scheduled time, the user can then choose to read the documents from the ordered 'to-read' list.

## 4. PRODUCING THE PODCAST

To produce the podcast, only one input is required: the URL of an RSS feed with links to the repository pages that include Dublin core meta-data. The EPrints software provides the exact support required. Our institutional repository uses the EPrints 3 software<sup>1</sup>.

A Perl script reads the RSS file, item by item, and grabs both the description and the link to the document's repository page. From the repository page, the script then retrieves the abstract and full-text URL, if available. It then uses the synthesized voice available on Mac OS X<sup>2</sup>, to produce an audio file of the description and abstract. Two tags are then added to the XML of the RSS file to convert it to a podcast. First an *enclosure* tag is added to describe the necessary audio file, including filename, size, and type. The second tag added is the *iTunes:subtitle* value, which includes the URL of the full-text download. Although PDF documents can be sent as the media of the podcast, here we are concentrating on the use of audio, and we do not necessarily want to download the full-text of all of the items. Consequently, we include the URL of the full-text to be used later if necessary. The adjusted RSS items are

printed into a new podcast file, along with appropriate XML overheads.

## 5. FUTURE WORK

The second stage of this early research into using iPod technology to find important reading material will be to produce a proof-of-concept AppleScript that parses the ratings of the recently listened to and re-synchronized podcast items. With each of the rated items, the script will get the full-text URLs from the meta-data of the podcast items and fetch the document. The papers are then stored in a growing list of documents, ordered by rating and then filename. Users can then access, print, read and remove any of the documents from the list, as they choose.

Part of our future work will be to investigate how the 'to-read' list should be organized to be familiar for users. One way may be to organize documents in sub-folders, according to star rating, and rename the files in a consistent manner. Another option may be to simply add the star rating to the front of the filename so that they are ordered in one long list that can be easily scanned. A user study will be performed to investigate these and other possible options. Further, a longitudinal study will be carried out to investigate the expected benefits of the system and understand how it is used over time. This work is also related to a similar system that can be used to plan a personalized schedule for a multi-stream conference, which is also in development.

## 6. CONCLUSIONS

Above we have briefly described a system to support busy researchers who are trying to keep up with the publications in their area of research. The system simply converts an existing document repository RSS feed to a voice-synthesized podcast. This system works by first fetching the description and link to the document's repository webpage are retrieved from the XML. The abstract and the full-text URL are then scraped from the Dublin Core meta-data of the repository page, and the RSS description and abstract are given to a speech synthesizer. Users can then simply sign up to a podcast to get the latest audio files downloaded directly to their music player. By allowing users to listen to and identify papers they would later like to read, they can carry out the activity during unutilized time where the eyes and hands might be otherwise engaged, such as traveling.

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<sup>1</sup> <http://eprints.ecs.soton.ac.uk/> - Welcome to ECS EPrints Repository – ECS EPrints Repository

<sup>2</sup> <http://www.apple.com/accessibility/learning/> - Apple – Accessibility – Literacy and Learning.