COMPUTECH

Cellular Analog Reports Application Requirements and Technical Approach

December 16, 2005

Current Document Status

Version Number	1.0
File Name	Cellular_Analog_Reports_Requirements.doc
Delivery Date	December 16, 2005
Owners	Robert Wiliams
Description	Description and technical requirements for the Cellular Analog Reports Application

TABLE OF CONTENTS

List of Tables

List of Figures

1   Introduction

1.1   Purpose

The purpose of the Cellular Analog Reports Application is to provide:

- a method for cellular carriers and interested parties to file õCellular Analog Reportsö and/or related comments as electronic documents;

- a process for FCC Wireless Telecommunications Bureau staff to receive, review and approve filed documents; and

- public access to approved documents via the WTBøs Cellular Service website at http://wireless.fcc.gov/services/cellular/.

1.2   Scope

This document describes and details the requirements for developing the following components of the application:

- Document Submission

- Internal Administration

- Online Document Access (Search and Display Web Interface)

1.3   Background

The FCC is requiring cellular carriers such as Verizon Wireless and Cingular Wireless to file Cellular Analog Reportsö in 2006 and 2007 to document the status of compatible analog cellular services (õAMPSö). (FCC PUBLIC NOTICE DA 05-3015 at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-05-3015A1.pdf details the policy and reporting requirements). The filing deadline for carriers is February 20. 2006. To best facilitate the reporting requirement and adherence to the deadline, the FCC requested that electronic filing be available for the carriers and other parties interested in providing related comments.

An extant online mechanism for receiving public comments and reports, the FCCøs Electronic Comments Filing System (ECFS) was deemed not suitable for these report submissions. ECFS requires associating submissions with specific FCC proceedings, and the proceeding related to compatible analog cellular services issues has been completed.

A report filing and display process also currently exists on the WTB website for Guardband Manager Reports at http://wireless.fcc.gov/services/guard700/data/reports/. The business process for the Guardband Manager Reports submission could be used as a basis for an enhanced electronic submission, review, and posting process for Cellular Analog Reports.

1.4   Assumptions and Constraints

1.4.1   Assumptions

- The application does not need to validate filer identities.
- The application does not need to be implemented as a single-system work flow application. Rather the client's requirements can be met by the development of two loosely coupled systems – one for the submission of reports for review and another for the display of approved reports on the web.
- Tied to the above is the assumption that there is no need to synchronize reports in the two systems.
    - Email/phone correspondence between FCC representatives and Web Team contractors will be used to resolve any post approval or post publishing issues.
    - There will be nothing in the report submission system to indicate that a particular report has or has not been published on the web.

1.4.2   Constraints

- Electronic submission capabilities must be available by mid-January 2006.

1.5   Document Overview

This document includes the following sections:

- Section 1 provides overview and background information related to the Cellular Analog Reports Application.

- Section 2 describes the methodology used to gather the requirements.

- Section 3 outlines requirements and proposed technical approaches.

- Appendix A. presents a proposed database design.

2   Methodology

This section describes the methodology used to collect, identify, and maintain requirements.

2.1   Requirements Definition

The Computech Web Team held meetings with FCC staff (Denise Walter, Linda Chang, and Bobby Brown) to review the reporting requirements and proposed business processes. Meeting minutes were compiled for reference and are available on the Website Docstation.

After the meetings, the Web Team recommended adapting the email web form and inbox functionality developed and maintained by the AAC Network Team. (An example implementation of the email web form is at http://esupport.fcc.gov/contactfcc/section106/submitmsg.jsp. These forms and associated internal email õinboxesö are currently used for several communicative purposes on the WTB website. They provide a mechanism for the public to email information and attachments, have the attachments converted to PDF, and then forwarded to an administration application with secure access and features similar to personal email).

For the report search and display component, the Web Team proposed functionality and design similar to the Guardband reports at http://wireless.fcc.gov/services/guard700/data/reports/.

 The Computech Web Team and AAC Network Team held a technical requirements meeting on 12/7/2005 to address process workflow, feature details, and technical approaches for integrating the submission, administration, and online search and display components.
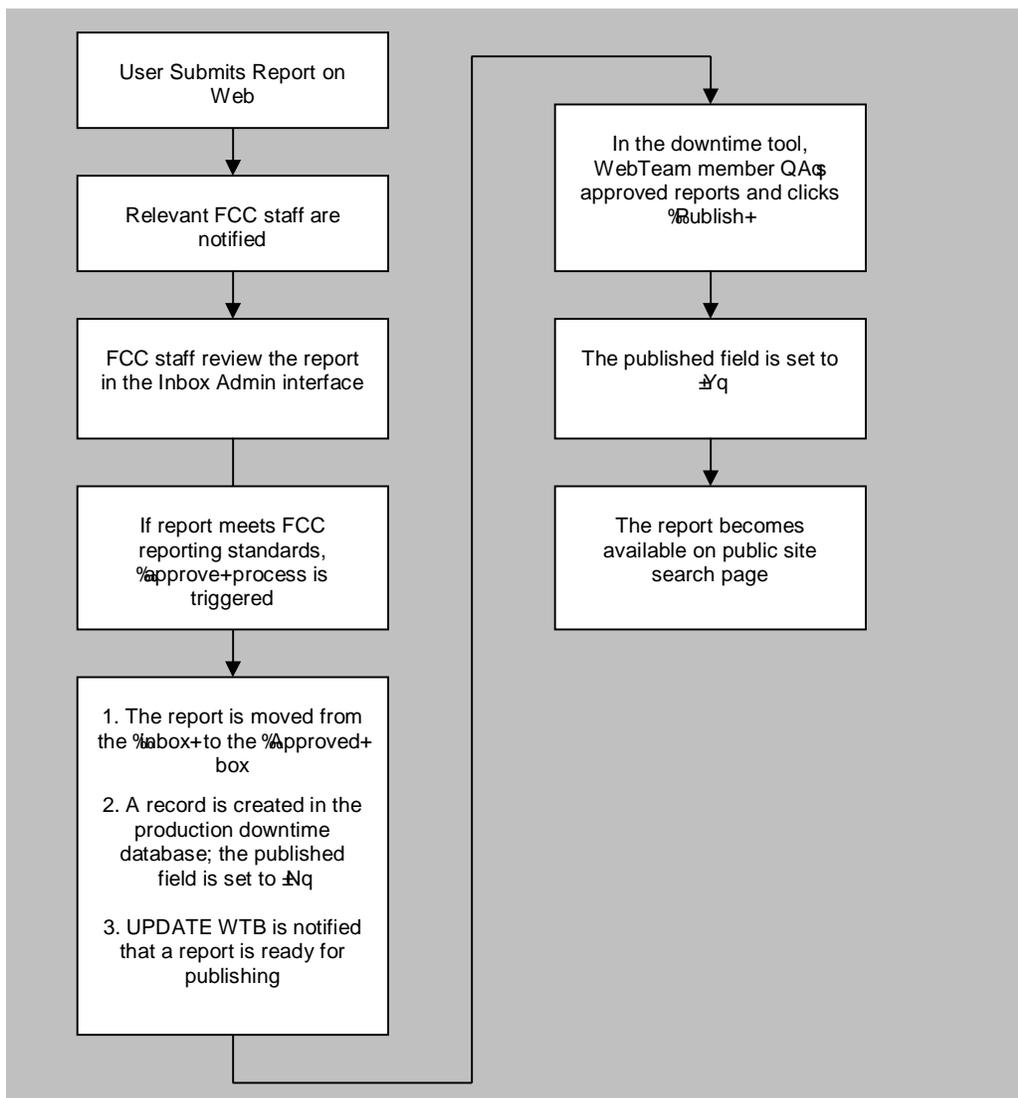
2.2   Requirements Maintenance

Requirements will be maintained in this document for review and final approval. Included are:

- A proposed overall workflow.
- Interface representations annotated with proposed features, workflow details, and technical approach summaries..
- Database design.

3   Requirements

From a user perspective, the Cellular Reports Application will consist of the following elements:
A web interface for the submission of Cellular Reports, a secure, administration interface for the
viewing and approving of submitted reports by FCC staff, and a Web interface for searching
approved reports.

Figure 1 -   Process Workflow

User Submits Report on Web

Relevant FCC staff are notified

FCC staff review the report in the Inbox Admin interface

If report meets FCC reporting standards, "approve" process is triggered

1. The report is moved from the "Inbox" to the "Approved" box

2. A record is created in the production downtime database; the published field is set to "No"

3. UPDATE WTB is notified that a report is ready for publishing

In the downtime tool, WebTeam member QA's approved reports and clicks "Publish"

The published field is set to "Yes"

The report becomes available on public site search page

3.1   Web Interface for the Submission of Cellular Reports

This will consist of a single web page with 1) text describing the submission requirements and process, and 2), the following form:

Figure 2 -   Report Submission Interface

1.(R) indicates a Required Field, (O) indicates an optional field (These will not be in the final form)

2.A maximum of 5 attachments can be added to the report, for a maximum size of 10 MB combined.

3.Upon Submission:

All attachments will be

- converted to PDF

- Named according to the following convention:
  Company/Entity Name, if available, otherwise First Name/Last name (truncated if greater than 30 characters in length), with spaces replaced by underscores, concatenated with a random number/string
  Verizon_986281262387162.pdf
  Verizon_798126863487123.pdf
  Bob_Smith_6830109213897213.pdf
  Bob_Smith_00298732738768237.pdf

- Saved to a common file server ó accessed by both Inbox tool, Web Team QA environment (Trym) and Public Search interface (Huldra/Ula)

  The files will be made available to the public, once reports are published, via a url to a Java Server Page which will stream requested files to the requesting process. This process will be a ColdFusion file which will check that any requested PDF is associated with a published report.

An email notification will be sent to those users identified as administrators of the application (list provided by Denise Walter)

The date and time of the report submission will be captured and recorded in the email.

3.2   Administration Interface for the Viewing of Submitted Reports by FCC Staff

A secure, administrative web page will be built which has common email functionality, plus some additional, custom functionality specific to this application:

1.   Login with user name and password (List of users to be provided by Denise)

View list of emails in an õinboxö with the following columns:

| Filer First/Last Name | Company/Entity | Files | Date Submitted |

Read emails

The following fields will be displayed when a report/email is read:

- Filer First/Last Name (display only)

- Filer Company/Entity Name
  (If the user did not supply this data, then the field will be auto-populated from First/Last Name)
  This field must be editable so approvers can make necessary changes before approving. The contents of this field will be used for the filer_name database field when the report is published.

- Filer Email (display only)

- Submission Date

- Message

- View attachments (PDFs)

- Reply to reports (if Email provided by user)
  The õFromö address of replies will be populated with the userøs fcc email address so that further correspondence will be directed to the users FCC email account.

- Forward reports to FCC email accounts

- Approve Reports

- When viewing a single report an õApproveö button will display. When clicked, the system will perform the following actions:

    o Send Notification to UPDATE WTB notifying that this report is ready for publishing

    o Move the report from the inbox to an õApprovedö box so that the inbox will only show those reports which still require action. õApprovedö reports will be those requiring final QA by the web team before being published on the web.

    o Write a record to the cellular_reports and cellular_reports_files tables in the production downtime tool database. (See Appendix A.)

- Delete Attachments from reports

- Delete reports

3.3   Web Team Internal QA Interface

The WebTeam will develop an interface, (built into the downtime tool as are Guard Band reports and Weekly PNs), for team members to review and then publish reports on the web.

Publishing will be implemented by setting the database record's published field to õYö.

The interface will allow for:

• Editing of the Filer Name field
• Deleting Reports
• Publishing and Un-publishing of Reports

3.4 Web Interface for Searching of Approved Reports

The interface should be based upon the Guard Bands reports interface and allow the users to

- View All published reports

- Search for reports by Filer Name

- Search for reports based on Filed Dates

- Sort results by Filer Name or Filed Date

Results should be paginated at 20 reports per page

Search results will display in a three column table: Filer Name | Reports | Date Filed.
One record (row) of this table will have 1 or more PDFs associated with it. These pdfs should be listed in the 2nd column (See example below)

The queries performed against cellular_reports and cellular_reports_files tables should only display those reports with a published field set to õYö

PDFs will not be linked to directly. Links to PDFs will go through a mechanism which verifies that they are associated with a õpublishedö report before displaying them.

Table 1 Report Table Display for Web Interface

Filer Name	Reports	Date Filed
Verizon	File_1.pdf File_2.pdf File_3.pdf	11/30/2005
AT&T	File_1.pdf	11/29/2005

Appendix A. Database Design

The downtime database will have the following two tables:

Table 2 Database cellular_reports

Table: cellular_reports

Field Name	Data Type	Length	Notes
Id	numeric	8	Primary Key
filer_name	varchar	90	
approved_date	datetime		Time of approval, when record was created in the db
report_date	datetime		
approved_by	varchar	90	Person originally approving report in Inbox tool.
published	varchar	1	=Nø or =Yø
delete_ind	varchar	1	=Nø or =Yø

Table 3 Database cellular_reports_files

Table: cellular_reports_files

Field Name	Data Type	Length	Notes
Id	numeric	8	Primary Key
report_id	numeric	8	Foreign Key ó id of associated report
file_name	varchar	90	