

# Specifications for a tracking system

Prepared for the ModMan Advisory Group

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This paper is a proposal for a system to help Collaborative Review Groups (CRGs) keep track of their editorial processes involving reviews, persons, series of events, and the relations between them. Based on this paper a search should be performed to identify available software (commercial or not) which fulfils the specifications. If such software cannot be found, the Collaboration may wish to consider developing its own software.

## Background

In 2000, Sonja Henderson carried out a survey among CRGs about their need for a tracking system. The results were summarised in a report to the SDG in October 2000. At the ModMan Advisory Group (MAG) meeting in March 2001 it was agreed to restructure the report so it could form the basis for a set of system specifications. This paper is the third draft of these specifications. In this version, the paper has been divided into two sections: part 1 is a general description of the rationale and concepts while part 2 is a working paper describing a proposed system implementation, which may later be turned into a full set of specifications.

Note: This paper will be revisited once Nancy Owens has identified 'best practice' as part of the quality improvement project.

# Part 1: General overview

## What is a tracking system?

A tracking system offers immediate and easy access to information on the production status of each individual review, from title registration to review publication and updates. It keeps a comprehensive history of everything that happens during the preparation of the review. This information can be made available in customised report formats or as search results. Prompts, reminders and letters can be generated automatically. The Editorial team will be able to easily monitor revisions, decisions and overdue activities. The data about reviews and the people involved in the review process will facilitate performance assessment.

## Need

A tracking system is needed for the following reasons:

- Most of the 'systems' used by review groups to track reviews from title to update stage are inadequate. As the number of reviews increases, the existing systems do not provide the information which staff need to monitor progress and identify deficiencies quickly.
- Routine and repetitive tasks in the editorial process need to be assessed for simplification, consolidation or elimination.
- Requirements for higher quality reviews and the increase in the number of reviews must be counterbalanced by improved productivity, especially with static or declining resources.
- Accurate and timely data collection will help staff to manage the preparation of reviews, while simultaneously providing detailed data to support budget requests.

## Objectives

- To ensure timely and efficient management of the editorial process.
- To provide information to the editorial team to support the operations and decision making within the Group.
- To make more time available for the application of standards and quality control by reducing the time spent on routine editorial operations.

## Benefits for editorial bases

### a) Operational/needs analysis of procedures

- Data collection on current operations of the Review Groups
- Investigation and analysis of the need for functional activities by individual Review Groups
- Determination of minimum procedures in the editorial process
- Identification of reports required
- Identification of the 'ideal' generic system (i.e. the selected system with the most desirable features and the fewest undesirable features)

### b) Improved operating efficiency

- Establishment and surveillance of policies and procedures, e.g. feedback/performance analysis
- Ensure that tasks are performed reliably and economically
- Automatic generation of reports and processing of enquiries

- Reduction of staff time in preparing management information
- Reduced need for error detection and correction

## Requirements

- Simple to use
- Minimise data entry and processing errors
- Easily identify the status of a review in the editorial process
- Easily identify the status of a person involved in the editorial process
- Easily identify tasks which need to be carried out
- Generate routine prompting when editorial action is required
- Assist in carrying out repetitive tasks

## Part 2: Proposed system - working paper

### Choice of technology

The system proposed in this paper is assumed to be electronic and database based although this is not the only option. A file based system where the record for each review or person is kept in a separate file (or on paper) could also be used. The primary advantage of a database system is that it allows similar information to be assembled in tables where it can easily be searched, edited, or deleted. In addition, information can be linked and re-used, so that each record (e.g. a person's record) only exists once. It also opens up the possibility of linking to other elements of the Cochrane Information Management System (e.g. CRG modules). In contrast, the advantage of a file based system is that the information is stored independently so that deleting one file will not affect the other.

Other choices about technology will also have to be made including on which platforms the system should run (especially whether it should be web based or a stand-alone application) and how the system and data will be protected from unauthorised access (e.g. multiple levels of passwords).

### Data elements

While going through the results of the survey for a tracking system (see background), three main data elements were identified: reviews (including titles, protocols, full reviews, and various intermediate stages of reviews), persons (including reviewers, coordinators, editors, advisors etc.), and events (e.g. 'protocol approved'). In general, the system should be able to re-use as much of this information from existing systems (e.g. RevMan, ModMan) as possible.

### Reviews

Reviews are the central data elements in the system. The term 'reviews' is used in this paper as a generic term for the documents which the system track, i.e. titles, protocols, full reviews, and various intermediate stages of reviews. It is not perceived that the system should store the full reviews (text, tables, etc.) – only the information needed for tracking. The system would need a unique identifier for each review to link to from other records. The unique ID assigned by RevMan is one possibility - another is the user defined four character review number. The latter is more comprehensible for a human, but not guaranteed to be unique. The system could keep copies of reviews records for each major update cycle or major version of the review as a log, but ideally the same information would also be available by searching through past events.

### Persons

Each person should have one record only and all reference to this person from other records should be done through linking. For linking, a unique ID number must be assigned to each person. If a review record, for example, needs to refer to the contact editor of the review, it only needs to store the unique ID instead of the persons full name. The unique ID for persons could be based on the four character code in RevMan, or a new system could be introduced.

### Events

Events form the link between persons and reviews. If information such as 'date review sent to contact editor' was stored together with the review record, the system would only capture the current state of the review – not it's past and future history. This is because the date would be overwritten for each new editorial cycle. This could to a certain extent be improved by creating a new review record for each update cycle, but still this would not be ideal. If, on the other hand, the 'date review sent to contact editor' was stored with the record for the editor, you would only be able to tell the last time he had received a review. In order to keep the entire history of reviews and persons, a system which stores event records separately from review and person records is needed.

Each event would be linked to one or more reviews and a number of persons involved in the events, e.g. the reviewer involved in updating a review or the editor involved in peer reviewing it. Following the links the other way around each review would be linked to a list of events, both pending and completed and each person would be linked to a list of events in which the person is involved.

A typical event consists of three parts: 1) Sending something to person(s). 2) Waiting for feedback on a given date. 3) Receiving feedback. This is reflected by each event record having three date fields, 'date sent', 'date expected' and 'date completed'. Therefore, there is no need for events for both 'Title sent for comments' and 'Comment on title received', only the former. For some events, e.g. 'Proposal for title received at editorial base', you only have to use the date completed.

The default events (see appendix 1) should be based on 'best practice'. It should, however, be possible for CRGs to modify those, for instance if they use different terms than the default, and even to add their own events. It should be possible to order events and to specify that one (group of) event(s) must follow another, e.g. 'review received' always follows 'protocol received'.

It should be possible to specify the action taken when the expected date for an event has passed without the date completed being filled in. This could be in the form of warnings that pop-up or automatic emails, or the system could do nothing at all until the user runs a report. This could be specified individually for each event or each type of events.

## **Processes**

Preferably, it should be possible to group events, e.g. to group the events involved in the review update cycle. A group of events could be called a process. In the system, a process would work like a checklist with a certain workflow. When a new process is started, blank records for the events associated with the process would automatically be created, where the dates and other information would later be filled in. The default processes should be based on 'best practice'. It should be possible for CRGs to modify default processes if they use workflows other than the default.

## Appendix 1: Default events defined in the system

The default events and processes defined in the system should be based on best practice for review groups.

Note: This section will be revisited once Nancy Owens has identified 'best practice' as part of the quality improvement project.

Note: It may be desirable in a later version of this document to divide the events in the table into processes. This is already done to some extent by sorting the events by status, but in a real system, a more granular division should be used.

Guide to table:

Status: T=title, P=protocol, R=full review, U=update

For each event it is marked with an 'X' which of the three dates (Date sent, Date expected, Date completed) that are used for the event.

Status	Name	Date sent	Date expected	Date completed	Notes
T	Proposal for title received at editorial base			X	
T	Internal check for duplication of titles			X	
T	Check for duplication of title on Review Titles Manager			X	
T	Title sent for comments	X	X	X	
T	Comments from editor sent to reviewer	X	X	X	
T	Title discussed with other group	X	X	X	
T	Title approved		X	X	
T	Title entered into Review Titles Manager			X	
T	Contact editor assigned			X	
T	Title modified			X	Reviewer contacted?
P	Reviewer contacted and asked for protocol	X			Combine with next?
P	Protocol received		X	X	
P	Protocol sent to contact editor	X	X	X	
P	Protocol copy edited before sending to referee(s)	X	X	X	
P	Protocol sent to statistician	X	X	X	
P	Protocol sent consumer(s)	X	X	X	
P	Protocol sent to TSC	X	X	X	
P	Protocol sent to referee(s)	X	X	X	
P	Edited version of protocol sent to reviewer			X	Feedback?
P	Feedback sent to reviewer expecting revised version	X	X	X	
P	Revised version of protocol in response to feedback sent for approval	X	X	X	
P	Protocol sent for approval	X	X	X	
P	Protocol sent for external copy editing	X	X	X	
P	Protocol approved and returned to reviewer with date review expected			X	
P	Protocol included in CRG module			X	
P	Protocol withdrawn			X	
P	Protocol deleted			X	

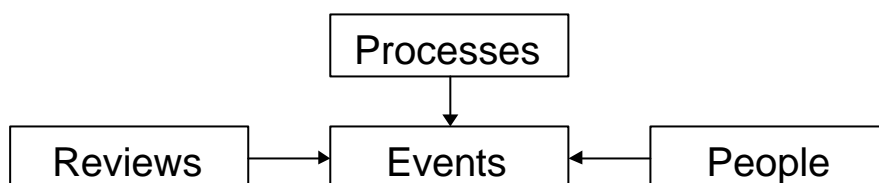
P	Search results sent to reviewer			X	
P	Post publication comment(s) received			X	Store title(s) of comment(s)
P	Post publication comment(s) responded to	X	X	X	
R	Reviewer contacted and asked for review	X			Combine with next?
R	Review received		X	X	
R	Review sent to contact editor	X	X	X	
R	Review copy edited before sending to referee(s)	X	X	X	
R	Review sent to statistician	X	X	X	
R	Review sent to consumer(s)	X	X	X	
R	Review sent to TSC	X	X	X	
R	Review sent to referee (s)	X	X	X	
R	Review sent to consumer network for draft synopsis	X	X	X	
R	Edited version of review sent to reviewer			X	Feedback?
R	Feedback sent to reviewer expecting revised version	X	X	X	
R	Revised version of review in response to feedback sent for approval	X	X	X	
R	Review sent for external copy editing	X	X	X	
R	Review approved and returned to reviewer with date update expected			X	
R	Review included in CRG module			X	
R	Review withdrawn			X	
R	Review deleted			X	
R	Permission for publication form to reviewer	X	X	X	
R	Post publication comment(s) received			X	Store title(s) of comment(s)
R	Post publication comment(s) responded to	X	X	X	
R	Date search for update completed			X	
U	Reviewer contacted and asked for update	X			Combine with next?
U	Updated review received		X	X	Store substantive / non-substantive
U	Updated review sent to contact editor	X	X	X	
U	Updated review copy edited before sending to referee(s)	X	X	X	
U	Updated review sent to other people	X	X	X	
U	Edited version of updated reviews sent to reviewer			X	Feedback?
U	Feedback sent to reviewer expecting revised version	X	X	X	
U	Revised version of updated review in response to feedback sent for approval	X	X	X	
U	Updated review sent for external copy editing	X	X	X	
U	Updated review approved and returned to reviewer with date next update expected			X	
U	Update review included in CRG Module			X	
U	Permission for publication forms to reviewer	X	X	X	For substantive updates
U	Post publication comment(s) received			X	Store title(s) of comment(s)
U	Post publication comment(s) responded to	X	X	X	
U	Date search for update completed			X	
U	Updated review withdrawn			X	
U	Updated review deleted			X	

## Appendix 2: Events related to people

It has not been decided whether these events related to people should be in the tracking system or they should be referred to the group's contact database.

- New reviewers pack sent to reviewer
- Other guidelines sent to reviewer
- RevMan sent to reviewer
- Meetings/workshops/training attended

## Appendix 3: Proposed overall database structure



Overall database structure. The arrows on the figure are "one to many" connections, i.e. reviews and people can be linked to multiple events, and processes consist of one or more events.

### Information stored for each review

ID number (computer generated, e.g. from RevMan)
Current status of the document (i.e. title, protocol, review, update)
Review title
Review number (RGC allocated number - 4 characters)
Version publication number, e.g. P2/R6 meaning second protocol version, sixth review version published (computer generated). Only used if copies of review records are kept for each update cycle)
Contact reviewer (link to persons table)
Co-reviewers (links to persons table)
Contact editor (link to persons table)
Internal referees (links to persons table)
External referees (links to persons table)
Keywords (CRG defined)
Notes
Date record created
Date record last modified

### Information stored for each person

ID number (computer generated, e.g. from RevMan)
Name
Address
Email
Role(s)
Date of first contact
Date of last contact
Date no longer active
Keywords (CRG defined)
Notes
Date record created
Date record last modified

### Information stored for each event

ID number (computer generated - user may never see this)
Type of event
Description
Date sent
Date expected
History of 'dates expected'
Date completed
Review(s) involved (links to reviews table)
Person(s) involved (links to persons table)

How to react when passed date expected (warning, email, etc. - users choice)
Links to documents associated with event (reports etc.)
Links to events which must be completed before this event
Status (pending, completed, cancelled)
Feedback from event for each person involved in event
Feedback approved? (for each person involved in event)
Additional data needed for each type of event. See table of default events.
Notes
Date record created
Date record last modified

### **Information stored for each process**

ID number (e.g. computer generated - user may never see this)
Type of process
Description
Ordered list of events involved in process

## Appendix 4: Examples of questions which the system should be able to answer

1. Number of reviews assigned to a particular person?
2. A list of the titles of reviews assigned to an individual person.
3. Number of reviews assigned to a particular person for which we have not had any feedback?
4. A list of the titles of reviews assigned to a particular person for which we have not had a reply.
5. Number of reviews assigned to a particular person for which we have not received the feedback by our deadline?
6. A list of the titles of reviews assigned to a particular person for which we have not received the feedback by our deadline?
7. Number of reviews in the editorial process.
8. Titles of reviews in the editorial process.
9. Number of titles registered reviews with expired date review expected.
10. Titles of registered reviews with expired date review expected.
11. Number of updated reviews in last 12 months/calendar year.
12. Titles of updated reviews in last 12 months/calendar year.
13. Number of reviews not updated within last 2 years.
14. Titles of reviews not updated within last 2 years.
15. Date last review assigned to a particular person.
16. Number of reviews assigned to a particular individual in any one calendar year.
17. Number of reviews for which we have added a comcrit.
18. A list of the titles of reviews for which we have added a comcrit.
19. Number of reviews for which we have added a comment but have not had a response from the reviewer.
20. List the titles of reviews for which we have added a comment but have not had a response from the reviewer.
21. Number of reviews for which the reviewer has received all feedback but not returned final draft for final approval.
22. List the titles of reviews for which the reviewer has received all feedback but not returned final draft for final approval.