

Protocol Requirements

Composite	Requirement	Grad	Survey	ESEM	EASE
Protocol Development	Ability to update the protocol at any stage	X	X		
Protocol Development	Provide templates for the protocol		X		X
Protocol Development	Support protocol piloting		X		
Protocol Development	Support Protocol Development and Validation				X
Decision Tracking & Tracability	Tracking decisions			X	
Differences of SLR and Mapping Studies	Support differences in the process between SLR vs. Mapping Studies			X	
Connecting with Industry	Portal to find industry problems that can be turned to SLRs			X	
Data Maintenance	Reference management				X
Data Maintenance	Document management				X
Data Maintenance	Data management				X
Data Maintenance	Support backup and maintenance of data for longterm evolution of research				X
Traceability	Map relationships between papers				X
Traceability	The ability to take snapshots and roll back features				X
Traceability	Consistent documentation of results across the process				X
Traceability	Support for tracing extracted data back to source study				X
Data Sharing	Citation and Document Sharing				X
Data Sharing	Share and reuse SLR data and meterial				X
Collaboration Support	Support for distributed review teams				X
Collaboration Support	Support for collaborative SLR	X	X	X	X
Collaboration Support	Support for conflict resolution				X
Motivation and RQ Templates	Support for motivation and RQ (picco) templates				X

Search Requirements

Composite	Requirement	Grad	Survey	ESEM	EASE
Seach Execution	Support the ability pause/resume the search process			X	
Seach Execution	Search string standrization	X	X		X
Seach Execution	Factoring search strings into multiple searches	X			
Seach Execution	Archive search queries and search process		X		
Seach Execution	Export search results	X			
Search Results	Duplicates removal	X	X	X	
Search Results	Need mass export of results in different formats (bibtex, XLS, etc)	X	X		X
Search Results	Support search results filtering		X		
Storage of Studies	Automated storage of PDFs		X		X
Storage of Studies	Management of stored studies				X
Storage of Studies	Ability to import external studies not from digital libraries				X
Integrated Search	Search and storage of data other than PDFs				X
Integrated Search	Portal to search stored literature				X
Integrated Search	Integration with databases services				X
Integrated Search	Automated search in digital libraries				X
Integrated Search	Support for collaborative search	X			X
Integrated Search	Automated search and storage of studies in digital libraries	X	X	X	X
Integrated Search	Importing search results from different databases				X
Integrated Search	Unified protal to search literature in common digital libraries				X
Integrated Search	Cross search of digital libraries				X
Integrated Search	Support for search iterations		X		X
Integrated Search	Support piloting search string				X

Selection Requirements

Composite	Requirement	Grad	Survey	ESEM	EASE
Collaboration Support	Generate "random set" for validation (IRR)			X	
Collaboration Support	Support collaborative Selection process	X			
Collaboration Support	Conflict detection and resolution	X			
Selection Process	Citations and documents management	X			
Support Text Mining	Natural language processor for included studies				X
Support Text Mining	Automated search of similar studies based on defined keywords				X
Support Text Mining	Textual analysis support				X
Support Text Mining	Keywords definition support				X
Support Text Mining	Automated keyword/phrases extraction, topic analysis in primary studies				X
Support Text Mining	Support search automation for evidence in study				X
Support Inclusion and Exclusion	Semi-Automated inclusion/exclusion of studies				X
Support Inclusion and Exclusion	Automated support to map snowballing of references				X
Support Inclusion and Exclusion	Support pilot of inclusion/exclusion				X
Support Inclusion and Exclusion	Semi-Automated to conduct snowballing	X	X		X
Support Inclusion and Exclusion	Support for inclusion/exclusion criteria management	X			

Quality Assessment Requirements

Composite	Requirement	Grad	Survey	ESEM	EASE
Collaboration Support	Support for collaborative assessment of articles	X			
Collaboration Support	Conflict resolutions during assessment	X			
QA Process	Provide QA checklist	X			
QA Process	Support assessing study relevance		X		
QA Process	Support the ability to assess the quality of study while extracting data		X		
Assessing Articles Quality	Measuring study relevance using the content of the study			X	
Studies Diversity	Provide QA criteria for different types of studies		X	X	
QA Measurement	Validating selected papers/studies			X	
Process Standardization	Ability to create QA criteria list		X		X
Process Standardization	Provide quality assesment criteria template				X
Process Standardization	Ability to reuse existing QA criteria		X		
Support Quality Assessment	Support quality assessment of studies, protocol, and process activites.				X

Data Extraction Requirements

Composite	Requirement	Grad	Survey	ESEM	EASE
Data Extraction Form	Ability to revise data extraction form at any stage	X	X		
Data Extraction Form	Ability to extract multiple studies from one article		X		
Data Management	Export extracted data		X		
Process Efficacy Assurance	Data Extraction Validity			X	
Tool Support	Integration with Excel			X	
Tool Support	Extraction of bibliographical items from web pages			X	
Tool Support	Support traceability of extracted data			X	
Tool Support	Data management			X	X
Tool Support	Document management			X	
Tool Support	Support automated reading of articles			X	
Collaboration Support	Comments for reasons made when applying criteria				X
Collaboration Support	Collaborative coding				X
Collaboration Support	Support collaborative data extraction process	X			
Collaboration Support	Conflict resolution during extraction	X			
Coding of Methods and Data	Support encode study methodology				X
Coding of Methods and Data	Support categories management				X
Coding of Methods and Data	Quantitative data capture				X
Coding of Methods and Data	Support codes management and results				X
Coding of Methods and Data	Qualitative data capture				X
Coding of Methods and Data	Support pilot of data extraction				X
Coding of Methods and Data	Support PDF annotation				X

Synthesis Requirements

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Synthesizing Primary Studies	Tracing a definition back to the original article	X			
Synthesizing Primary Studies	Population analysis of studies			X	
Synthesizing Primary Studies	Measure how close articles are			X	
Synthesizing Primary Studies	Mix evidences from multiple studies			X	
Synthesizing Primary Studies	Mix evidences across study design			X	
Synthesizing Primary Studies	Support export of synthesied data				X
Automated Analysis	Coding Support				X
Automated Analysis	Automated analysis and summary of coding				X
Automated Analysis	Automated classification based on coding				X
Automated Analysis	Automated reports generation of stuides meta-data				X
Automated Analysis	Automated reports generation of statistical data, list of included/excluded stuides, and criteria				X
Automated Analysis	Support graph generation				X
Handling Data	Summarizing qualitative and quantitative data			X	X
Collaboration Support	Support collaborative process during the synthesis				X
Statistical Analysis	Support comparision of qualitative evidence				X

Documentation Requirements

Composite	Requirement	Grad	Survey	ESEM	EASE
Report Preparation	Ability to aggregate the extracted data in one place	X			
Report Preparation	Generate a template for the documentation				X
Validation	Report Validation				X
Visualization	Visualization support of cluster of papers				X
Visualization	Visualization support of qualitative findings			X	X
Visualization	Generate presentations using Latex				X