



Systems Engineering and Project Management (SEPM) Joint Working Group

Aims and Objectives

1. Introduction

This paper sets out the aims and objectives of the Joint Working Group (JWG) established between the UK branch of the International Council on Systems Engineering (INCOSE UK) and the Association of Project Management (APM). These two organisations, leaders in their fields of Systems Engineering (SE) and Project Management (PM) have agreed to work together to explore how to better integrate SE and PM in order to help organisations avoid some of the costliest problems associated with complex projects, such as delays and cost overruns, by describing and promoting good practice in the successful integration of SE and PM.

2. Background

The initiative commenced in January 2013 when senior members of both organisations attended a joint workshop to explore the possibility of working together on this topic. An inaugural kick-off meeting of the JWG was held in July 2013 where the aims and objectives of the working group were discussed, individual workstreams were identified and the governance of the JWG was established.

3. Aims and Objectives

The JWG brings together leading experts and practitioners from industry, academia and government to support the development of guidance and practical advice on how best to improve SE and PM working together. The aims and objectives are as follows:

- Aim – To develop and promote good practice and guidance dovetailing SE and PM and promote systems thinking across the wider decision making community in the UK (and to influence developments internationally) in order to support the improved delivery of complex projects and avoid common pitfalls.
- Objectives:
 - I. To set out the benefits of better ways of working between SE and PM through a well thought out and compelling value proposition
 - II. To provide practical advice and guidance on how SE and PM can work better together throughout the project lifecycle identifying roles and responsibilities of key stakeholders, the competences that they require to fulfil those roles and what shared culture and behaviours they will need to adopt

- III. To communicate the benefits of improved working between SE and PM through the production of guidance material, education and training and the use of practical case studies from real world examples
- IV. To promote the benefits of systems thinking across the PM, SE and wider decision making community.

4. Workstreams

The JWG has established eight workstreams (WS) to deliver these objectives as follows:

What are the benefits?	
WS 1	Compelling value proposition
How to deliver the benefits?	
WS 8	Processes and lifecycles
WS 4	Roles and responsibilities
WS 6	Competency framework
WS 7	Education and training
How to promote the benefits?	
WS 2	Communication
WS 3	Guidance material
WS 5	Case studies

5. Approach

The proposed approach is to iterate between the following:

1. Establish the value proposition, setting out what we believe to be the benefits of better integrated SE and PM on complex projects
2. Focus on how to deliver the benefits. Here the proposal is to take a standard SE lifecycle such as that set out in ISO 15288 which is in use today on many complex projects and identify where we can better integrate SE and PM as we progress through that lifecycle. We can also use this lifecycle to define key SE and PM roles and responsibilities and identify the necessary competencies required in these roles. Subsequently we can investigate other lifecycle approaches used in delivering complex projects
3. In parallel we will develop a plan to communicate the benefits through a range of media outlets to a diverse range of audiences. This will be supported by appropriate guidance material, real world case studies and information on targeted education and training.

6. Schedule

Key milestones for workstream outputs are set out in the chart below. The objective is to feedback the overall results of the JWG to the two sponsoring organisations (APM / INCOSE) annual conferences. However this is not to prevent briefings to other organisations / media outlets once the workstreams have produced and peer reviewed technical outputs.

Activity	2014												2015											
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Major Conference - ASEC 2014									◆															
Major Conference - APM 2015														◆										
Major Conference - INCOSE IS 2015																	◆							
Co-Chairs Annual Report					◆																			
Workstream 1																								
Value Proposition Draft	◆																							
Value Proposition final				◆																				
Workstream 8																								
Simple guide tabulating lifecycle models				◆																				
SEPM working together through the lifecycle						◆																		
Specific examples of SEPM lifecycle application								◆																
Workstream 4																								
Definition of SEPM roles & RASCI to processes and products in the lifecycle				◆																				
Workstream 6																								
Alignment guidance to existing SEPM competency frameworks							◆																	
Workstream 7																								
Summary of training needs, existing course and current gaps					◆																			
Workstream 2																								
Update comms plan				◆																				
Commence Implementation of comms plan								◆																
Workstream 3																								
Finalise Z11 Guide				◆																				
APM style booklet on Z11 and WS4 output									◆															
APM booklet on Systems Thinking											◆													
Workstream 5																								
Case studies report (updated)					◆																			

Appendix A

Core objectives and outputs for each of the workstreams

What are the benefits?		Objectives	Outputs
1	Value proposition	An exposition on the value of the integration of SE and PM	<ul style="list-style-type: none"> A one page summary of the value proposition
How to deliver the benefits?		Objectives	Outputs
8	Processes and Lifecycles	Define a unified SEPM lifecycle model (emphasising how SE and PM complement each other) and how this links to SEPM processes, products and roles.	<ul style="list-style-type: none"> Simple guide tabulating extant lifecycle models (with references to these and sources of guidance on how to choose between them) and the superset of SEPM processes.(1) Common SEPM lifecycle model (V-model) with links to SEPM processes (as captured by WS4/8), products (as captured by WS4), and perhaps roles (also captured by WS4), plus a discussion on the application of the common model to the various types of programme/ project, i.e. Transformational Change, (New) Product Development, Product Enhancement and Capability Acquisition. (2) Specific examples of applying SE methodologies and/or techniques to areas of PM, or vice-versa to better manage complexity, e.g. Product-based Planning, Benefits Realisation, Programme Assurance, and linking these to the Case Studies produced by WS5.
4	Roles and Responsibilities	Define SE and PM roles and responsibilities and transitions over the project lifecycle	<ul style="list-style-type: none"> Single Document containing: <ol style="list-style-type: none"> Identification & Definition of SEPM roles RASCI mapping of SEPM roles to process products (i.e. responsibilities) for each type of programme/ project, i.e. Transformational Change, (New)

			<p>Product Development, Product Enhancement and Capability Acquisition.</p> <p>c) Discussion covering:</p> <ul style="list-style-type: none"> i) Similarities and differences between SE and PM roles ii) Influence of project size, complexity and industry iii) Changes in roles across the lifecycle and potential 'Flashpoints'
6	Competency Framework	Identification of common / complementary competencies into a joint framework	<ul style="list-style-type: none"> • Alignment guide for existing SE and PM competency frameworks
7	Education And Training	Identification of education and training needs and material to exploit SEPM integration	<ul style="list-style-type: none"> • Summary of training needs, existing courses and current gaps
How to promote the benefits?		Objectives	Outputs
2	Communication	Describe and promote good practice in the integration of SE and PM in complex projects	<ul style="list-style-type: none"> • SEPM JWG Communications strategy and implementation plan
3	Guidance Material	Produce guidance material accessible for SE and PM community	<ul style="list-style-type: none"> • Z11 Guide for SE audience. • APM style booklet based on Z11 & WS4 outputs for PM readership on the benefits of closer working together between SE&PM, includes glossary. • APM Booklet introducing the benefits of systems thinking to non-technical projects.
5	Case Studies	Gather and document case studies which show what good SEPM integration looks like	<ul style="list-style-type: none"> • Summary reference of real world cases studies on SEPM