

ENGINEERING & CONSTRUCTION RISK INSTITUTE

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Purpose: The purpose of this best practice is to serve as a benchmark of the maturity level of the individual E&C firm’s risk management process. The firm can judge its practices against these requirements and, through ECRI, against industry-wide practices.

Application: The document is written to apply to all firms within the industry. It is based on the work of **Dr. David Hillson, Risk Doctor and Partners**

	Level 1 Naïve (Unaware)	Level 2 Novice (Basic)	Level 3 Normalized (Mature)	Level 4 Natural (Advanced)
DEFINITION level of Risk Management capability	<ul style="list-style-type: none"> Unaware of need for management of risk No structured approach to dealing with uncertainty Inconsistent and reactive risk management processes Little or no attempt to utilize lessons learned 	<ul style="list-style-type: none"> Experiments with risk through a small number of individuals No generic structured approach to risk management Aware of potential benefits of managing risks. but inconsistent application, not gaining full benefits 	<ul style="list-style-type: none"> Management of risks built into routine business processes Formalized generic risk processes Benefit understood at all levels of the organization, although not always consistently achieved 	<ul style="list-style-type: none"> Risk aware culture with proactive approach to risk management in all aspects of the business Active use of risk information to improve business processes and gain competitive advantage Emphasis on opportunity management (“positive risk”)
CULTURE of the Firm	<ul style="list-style-type: none"> No risk awareness Resistant reluctant to change Tendency to continue with existing methods 	<ul style="list-style-type: none"> Risk process may be viewed as additional overhead with uncertain benefits Risk management 	<ul style="list-style-type: none"> Risk management defined in policy Benefits recognized, quantified and expected Prepared to commit 	<ul style="list-style-type: none"> Top-down commitment to risk management with leadership by example Proactive risk management encouraged and rewarded

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	Level 1 Naïve (Unaware)	Level 2 Novice (Basic)	Level 3 Normalized (Mature)	Level 4 Natural (Advanced)
		used only on selected projects	resources to realize opportunities	
PROCESS characteristics	<ul style="list-style-type: none"> Risk Management processes, if any, imbedded in project procedures 	<ul style="list-style-type: none"> Tools may include risk committees, identification workshops, simple risk ranking, a reporting process and action plans No generic formal process or process not in general use Process effectiveness depends on the skills of the in-house risk team and dedication of proposal project managers 	<ul style="list-style-type: none"> Tools include risk appetite definition, risk/reward modeling, monetary and schedule risk contingency quantification, and risk based audits Generic process applied to most projects Formal processes included in the quality system Active allocation and management of risk budgets at all levels Risk management training formalized Risk ownership defined Risk and Change management processes coordinated Consistency reviews for application of practices and 	<ul style="list-style-type: none"> Tools include scenario planning, optimization modeling, and real time monitoring Risk management basis for business processes Regular reviewing and updating of risk processes Routine risk metrics with constant feed back for improvement

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	Level 1 Naïve (Unaware)	Level 2 Novice (Basic)	Level 3 Normalized (Mature)	Level 4 Natural (Advanced)
			controls	
EXPERIENCE level in Risk Management	<ul style="list-style-type: none"> Inconsistent understanding of risk principles, concepts, or language 	<ul style="list-style-type: none"> Limited to individuals who are leading risk process development and may be untrained 	<ul style="list-style-type: none"> In-house core of expertise, the “risk group” Buildup of experienced personnel and project results 	<ul style="list-style-type: none"> All staff risk-aware and using basic skills Learning from experience, maintaining database for analysis of new work External training enhances process and skills
APPLICATION of the Risk Management Process	<ul style="list-style-type: none"> No dedicated resources Risk plan is a minor subset of the Project Execution Plan 	<ul style="list-style-type: none"> Inconsistent application “Risk group”, if formed, not always consulted Ad-hoc collection of tools and methods 	<ul style="list-style-type: none"> Routine and consistent application to risk-oriented projects Application throughout the project life cycle Committed resources Tools and methods available and understood. 	<ul style="list-style-type: none"> Process applied to all activities and projects Risk basis included in reporting and decisions