University of Toronto Commissioning Task and Deliverables Responsibility Matrix

This document lists the University of Toronto's expectations of commissioning process tasks, the required deliverables, and roles and responsibilities of various stakeholders. This is supplemental to the processes and documents listed.

Task ID	Project Phase	Task	U of T Project Team (PM)	Design Engineer	CxA	General Contractor	BAS Contractor	U of T Project Team (FS U/O)	U of T Project Team (FS IT)	U of T Project Team (FS U/O-ACG)	Deliverable	Deliverable Status Completed /Ongoing/Not started /NA
1	Design	Owner Project Requirement (OPR) update *(Original OPR defined by Project planning report and RFP to Design Engineer)*	O	P/U	R			P	P	P	Updated Owner Project Requirement (OPR)	
1.1	*Schematic Design*	Development Basis of Design, (BOD)	O	R	U			P	P	P	Basis of Design	
1.1.1		Verification of BOD against OPR and standards	O	U	R			P	P	P	BOD Verification Report	
1.1.2		Development of Design Specifications/Drawings	O	R	U			P	P	P	Design Specifications/Drawings	
1.1.3		Cx Design Review	O	U/P	R			P	P	P	Cx Design Review Report/ Issues Log	
1.2	*Design Development*	Update Basis of Design, (BOD)	O	R	U			P	P	P	Updated Basis of Design	
1.2.1		Verification of BOD against OPR and standards	O	U	R			P	P	P	Updated BOD Verification report	
1.2.2		Development of Design Specifications/Drawings	O	R	U			P	P	P	Updated Design Specifications/Drawings	
1.2.3		Cx Design Review	O	U/P	R			P	P	P	Updated Cx Design Review Report/ Issues Log	
1.2.4		Submission EMRS Estimated integration Time and Cost	O/U	U	U			I	R	I	Memo indicating time and cost.	
1.3	*Construction Documents*	Update Basis of Design, (BOD)	O	R	U			P	P	P	Updated Basis of Design	
1.3.1		Verification of BOD against OPR and standards.	O	U	R			P	P	P	Updated BOD Verification report	
1.3.2		Development of Design Specifications/Drawings	O	R	U			P	P	P	Updated Design Specifications/Drawings	
1.3.3		Cx Design Review	O	U/P	R			P	P	P	Updated Cx Design Review Report/ Issues Log	
1.3.4		Development Cx Plan	O	U/P	R			P	P	P	Cx Plan	
1.3.5		Cx Specification	O	U/P	R			P	P	P	Cx Specification	
1.3.6		Develop Systems Manual structure	O	P	R/U			P	P	P	Systems Manual Structure	
1.4	*Tender Documents*	Design Specifications/Drawings	O	R	U			P	P	P	Design Specifications/Drawings(updates)	
1.4.1		Cx Design Review	O	U/P	R			P	P	P	Updated Cx Design Review Report/ Issues Log	
1.4.2		**Closure of Final Design Review Report/ Issues Log/Verification Report**	O	P	R			P	P	P	Sign off closed Final Design Review Report/ Issues Log/Verification Report	
2	Construction											
2.1	*Start-up*	Issue IFC Design Specifications/Drawings	O	R	U	U	U	I	I	I	IFC Design Specifications/Drawings	
2.1.1		Cx IFC Design Review Report/ Issues Log	O	U/P	R			I	I	I	Updated Cx Design Review Report/ Issues Log	
2.1.2		Issue IFC Basis of Design, (BOD)	O	R	U			P	P	P	IFC Basis of Design,	
2.1.3		Verification of BOD against OPR and standards	O	U	R			P	P	P	Updated BOD Verification report	

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2.1.4		**Closure of IFC Design Review Report/ Issues Log/Verification Report**	O	P	R			P	P	P	Sign off closed IFC Design Review Report/ Issues Log/Verification Report.	
2.1.5		Develop Construction Schedule	O	P	U	R	P	I	I	I	Construction Schedule	
2.1.6		Develop Cx Schedule	O	P	R	U	U	I	I	I	Cx Schedule	
2.1.7		Update Construction Schedule	O	P	U	R	P	I	I	I	Updated Construction Schedule(with Cx Schedule)	
2.1.8		Cx Plan Update	O	I	R	U	U	I	I	I	Updated Cx Plan	
2.1.9		Submittal /Shop drawing Review	O	R	R	U	U				Reviewed Submittal/Shop Drawing	
2.1.10		Submittal Review (BAS)	O	R	R						Reviewed Submittal/Shop Drawing (BAS)	
2.1.11		BAS Submittal Review Session	R	P	P	P	P	P	P	P	Minutes of Meeting	
2.1.12		F&S Review of Accepted ,Reviewed /Reviewed as noted BAS submittal Review	O	U	U	U	U	R	R	R	Reviewed Report Memo	
2.1.13		Develop and issue Inspection Report (Pre Cx Templates)	O	I	R	U	U	I		I	Inspection Report (Pre Cx Templates)	
2.1.14		Develop and Issue Test Procedures ,FPTs (Pre Cx Templates)	O	I	R	U	U	P		P	Test Procedures ,FPTs (Pre Cx Templates)	
2.1.15	*Ongoing during construction*	Cx Meetings Minutes and Agenda	O	P	R	P	P	I	I	I	Minutes of Meeting/s	
2.1.16	*Ongoing during construction*	Cx Site review	O	P	R	U	U	I	I	I	Cx Site review report/Issues Log/(Updates)	
3	**Commissioning**											
3.1	*Pre Commissioning*	Static Verification (As built to Design)										
3.1.1		1. Complete Sensor /End device Calibration Report	O	P	U	P	R				Sensor /End device Calibration Report	
3.1.2		2. Complete Point to Point Wiring Report	O	P	U	P	R				Point to Point Wiring Report	
3.1.3		3. Complete System Installation Verification (As built to Design Control Schematics)	O	P	U	P	R				System Installation Verification red line Mark up.	
3.1.4		4. Complete DDC/Control panel Installation Review .	O	P	U	P	R				DDC/Control panel Installation Report with Snap shots	
3.1.5		5.Compelte Power to Controllers with UPS operation tests	O	P	U	P	R				Power to Controllers with UPS operation report	
3.2	*Commissioning (Functional performance testing)*	Functional Verification (As built to Design)										
3.2.1		Generate /Update Issues and resolution Logs	O	P	R	U	U		I	I	Updated Issues Log	
3.2.2		Update Shop drawing Variances	O	P	R	P	P		I	I	Updated Shop drawing Variances	
3.2.3		Verification Communication Wiring from Field controllers to Network controller.	O	P	R	P	P				Signed off Installation Check sheets	
3.2.4		Verification of Communication Wiring from Network controller to patch panel. (Installation Check sheets and Fluke reports)	O	P	R	P	P				Signed off Installation Check sheets	

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3.2.5		Temporary GUI Verifications	O	P	R	P	P				Updated FPTs	
3.2.6		Bacnet system compliance verifications	O	P	R	P	P		I	I	Banat system compliance verifications	
		Conduct Functional Performance testing (FPT)	O	P	R	P	P	P	P	P	Completed Functional test reports	
3.3	*Field Cx Documentation Submission*	Assimilate Field Cx Documentation	O	I	R			I	U	I	Completed Field Cx Documentation Package	
3.4	*Systems Manual*	Develop Systems Manual	O	P	R	P	P	U	I	I	Updated Systems Manual	
3.5	*Training*	Develop Training Plan	O		O	R	P	P		P	Training Plan	
3.5.1		System Operational Training (Mech/Electrical)	O		P	R	P	P		P	Training Review reports for each system	
3.5.2		BAS Training Module A	O		O	I	R	P		P	Training Review report	
3.5.3		BAS Training Module B	O		O	I	R	P		P	Training Review report	
3.5.4		BAS Training Module C	O		O	I	R			P	Training Review report	
3.6	*EMRS Compliance Testing*	EMRS Database Verification	O		I	I	I		R	I		
3.7	*EMRS Graphical User Interface Programming*	EMRS Database programming							R			
3.7.1		EMRS GUI Functional Verifications	O		R	I	I	P	P	P		
3.7.2		Systems Manual	O	I	R	I	I	U	P	P		
3.7.3		Temporary GUI Database back up	O		P	P	R	P	U	U		
3.8	*EMRS Training*	Training Module D	O		P	P	P	P	R	P		
3.9	*Final Tune up*	As built Submission after final tune up	O	U	U	P	R	U	U	U		
3.9.1		Operation and Maintenance Manual	O	U	U	P	R	U	U	U		
3.9.2		Final Cx Report	O		R	P	P	U	U	U		
3.10.	*Systems Manual*	Develop Systems Manual	O	P	R	P	P	U	I	I	Updated Systems Manual	
3.11	*Systems Handover Sheet*	Handover Sheet signature and submission	O		R			I	I	I	Handover Sheet Signed	

Legend	Description of role
P=Participate	Provides input/or Review
R=Responsible	Develops deliverable or Executes or Leads the process
O=Oversight	Coordinates /Manages Process
U= Used By	Document recipient
I=Information only	Copy of the document to be forwarded for information and not necessarily will provide input.
* Special Circumstances	