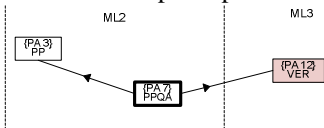




The matrix is capable of representing the dependency information about all the PAs. We also represent this information in graphs, for better understanding. The graph for this EDA example is presented in figure. 1.

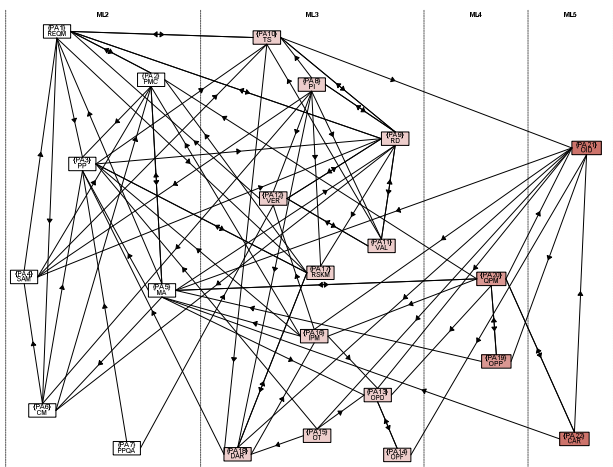


Figures 1: Elementary Dependency Analysis Graph

Dependencies of CMMI PAs

Table 2. Dependencies between all the CMMI PAs

CMMI PA	ML 2										ML 3						ML 4		ML 5		Number of Dependencies				
	(PA1) REQM	(PA2) PRQC	(PA3) SAM	(PA4) MA	(PA5) CM	(PA6) PPOA	(PA7) PR	(PA8) RQ	(PA9) VS	(PA10) VAL	(PA11) VER	(PA12) CPO	(PA13) CPO	(PA14) CPO	(PA15) CPO	(PA16) CPO	(PA17) CPO	(PA18) CPO	(PA19) CPO	(PA20) CPO		(PA21) CPO	(PA22) CPO		
(PA1) REQM		X	X																					6	
(PA2) PRQC			X	X																					2
(PA3) SAM		X																							4
(PA4) MA		X	X																						4
(PA5) CM		X	X	X																					7
(PA6) PPOA		X	X	X	X																				3
(PA7) PR			X																						2
(PA8) RQ				X	X																				8
(PA9) VS		X			X	X	X	X										X	X						7
(PA10) VAL							X	X	X												X				5
(PA11) VER							X	X	X																3
(PA12) CPO									X	X															3
(PA13) CPO											X														1
(PA14) CPO												X													1
(PA15) CPO													X												3
(PA16) CPO														X											3
(PA17) CPO															X										9
(PA18) CPO																X									2
(PA19) CPO																	X	X							3
(PA20) CPO																		X	X						2
(PA21) CPO																			X	X					7
(PA22) CPO																				X	X				7
(PA23) CPO																					X	X			2
Number of Dependencies	6	7	9	2	6	4	0	1	3	6	3	6	4	2	1	3	9	5	2	3	3	3	1		



Figures 2: Global dependencies between CMMI PAs

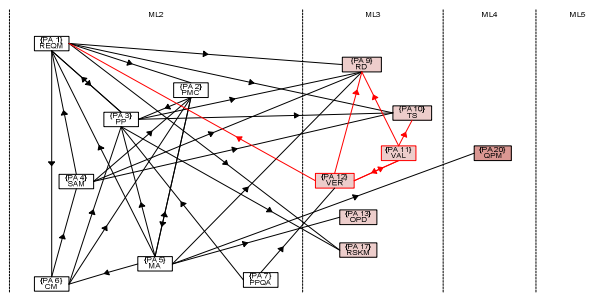
To create the complete matrix and graphs of the CMMI PAs we executed the EDA for all the PAs. The resulting matrix is presented in Table 2. To easily understand the impact of the dependencies between all the PAs, we organized the matrix by maturity level.

It is also possible to obtain a graph representation of the global matrix of Table 2, which can be seen in figure 2.

ML-2 DEPENDENCY ANALYSIS WITH EDA FOR VALIDATION AND VERIFICATION PAS

As a motivation to convince SMEs that CMMI maturity level 2 brings real benefits, we decided study what are the theoretical dependencies we should expect when performing the ML2 assessment and, at the same time,

prepare for one CL3 assessment for some process areas, namely validation and verification (figure 3)



Figures 3: Dependencies between ML2 and V&V PAs

CONCLUSIONS

CMMI official documentation does not explicitly describe the existing dependencies among the PAs. To find out the global theoretical dependencies, we need to complement the reading of the documentation with special care and analysis capabilities, but, even after that, it is hard to obtain the global view of the dependencies.

Our motivation to explicit the global dependencies between CMMI PAs arose when we tried to understand the impact of implementing the maturity level 2 simultaneously with some PAs from maturity level 3 as a way to make CMMI more widely used in Portuguese SMEs.

As future work, we will also complement our current dependency analysis study with other dependencies gathered from other sources of information.

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