CMMI process for:

Terrorist attack preventing system

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CMMI level	Project areas	Specific goal	Specific rules	Artefact	Description of applying rules in current project, possible improvements, references on other papers, …
1	Requests initialization			Idea of solutions	*Terrorist takedown is information system which with use of drones take picture of peoples on events and proccessing pictures, with use of artificial inteligence and machine learning algorithms, and anylizing if there is suspicious people.Today we have people who secure events and watchs for suspicious people, but that is not good solution because people cant memorize much different faces and lot of peple wouldnt be recognized. Our system will have big database with pictures of all suspicious people collected and algorithm which will very quick compare picture of people in event with all people from database.*
2	Requirements management	Requirements management	Establish requests agreement		it is necessary to generalize the requirements of the users.
			Establish obligations according to requirements		It is necessary to achive all functionality definined by project.
			Requests changes management		For each change in requests, try to react instantly and to be flexible as possible.
			Maintain bidirectional mapping of requests		Try to achive good communication between all users and designers.
			Identify contradictions between project activities and requirements		Detect all contradictions between project development and requests, on time, and handle them propertly(fast and cheply as possible).
		Standardize management process	Establish organizational rules		Design a detailed plan for every step of project and guidelines for better following of that plan.
			Process planning		Design a detailed plan of project in Microsoft Project.
			Provide recourses	Project plan	Provide necessary parts, monetary compesation and equipment for develepors.
			Assign responsibilities	Project plan	Share responsibilities on all partners as equal as possible.
			Train staff	Training plan Or project plan	Send developers to seminars which will increase knowledge about key parts of project(machine learning, image proccessing...)
			Manage configurations	Configuration Management plan	Scheduling regular meetings to discuss about finished objectives and current objectives of project.
			Identify and include important participants		Scheduling regular meetings to notify all developers on progress of the system.
			Control and monitor process		At the end of every continent organize meeting where will be done some tests to check correctness of that part.
			Objectively evaluate conceptual representations		Schedule meeting for all partners in which they will present their ideas about how the see the future project development
			Perform status revision with higher level management		From time to time check financial state of the project.
	Project planning	Determine estimations	Define project domain		Project domain are all countries in the world.
			Define work product and task estimates		Determine the criteria for evaluating all the artifacts created in the previous phases.
			Define the lifetime of the project		Developing system is one year and maintaining is unlimited.
			Define estimates of required effort and price		Define estimations of the entire project

		Develop project plan	Define budget and schedule		Define budget for each phase of project and every team.
			Identify project risks		1. Software companies declining collaboration 2. Not enough money for all phases
			Data management plan		Making central system where be all necessary data, also in that system wi need to define mechanism which will get data quickly.
			Project resources plan		Make plan for providing all resources described above.
			Necessary knowledge and skills plan		Make detailed plans of time and subjects of meetings, where will be performed: consulting with experts from mechanical faculties, from sowtvare companies and intelligence services.
			Plan participations		Make detailed plans for all project phases, which partners will be involved in which phace and what their duties will be.
			Establish project plan		Use all plans described above to make a project plan, on very high level of detailing.
		Adhere to the plan	Conduct revision of the project plan		Make a reviewed project plan after every meeting, include ideas which are accepted.
			Reconcile work activities and available resources		All funding of the project is equally divided to all teams, proportionate to needs of phase.
			Highlight obligations defined by the plan		Track and control all project plan activities and make sure that all are fullfilled.
	Project monitoring and control	Monitoring the project by comparing with the plan	Track the parameter of the project plan		Keep track of project plan activities, in order to improve it if is needed.
			Track obligations		Keep tracking of every task, using Microsoft Project.
			Track project risks		Track all risks mentioned above, design possible solutions in case of issues.
			Track data management		Maintain database in state of consistency. Validate database data.
			Track engagement of relevant participants		Keep track of every participants and task status in Microsoft Project
			Conduct revisions to estimate progress		Do meetings at the end of every phases to discuss possibly solution.
			Conduct revisions in key points		Documenting all audits of project.
		Manage correction actions	Analyze problems		All problems detected must quickly be documented and passed to superior.
			Execute correction actions		All problems during project’s life must be corrected instantly.
			Manage correction actions		Documenting all corrections of project.
	Configuration management	Determine basics	Identify configuration items		Incremental development
			Establish a system for configuration management		Coordinator: must monitoring all teams and project development.
			Create the basics for publishing		Develop modules in each phase that will be delivered for testing.
		Monitoring and controlling changes	Track change requests		Coordinator must keep track of all changes and inform relevant team leaders.
			Control configuration items		Coordinator must keep track of every detail of the project relevant to him.
		Form integrity	Form notes for the configuration management		Provide all necessary tools.
			Execute configuration		Do estimations of given configuration, in detail, and pass it to all teams.

			estimates		
	Supplier agreement management	Establish agreement	Determine the type of procurement		Parts for drones: import Software: license, documentation Equipment: suitable for programmers, for testing
			Choose suppliers		Form a tender and choose most suitable offer.
			Establish agreement with suppliers		After company selection sign contract.
		Adhere to the agreement	Make an overview of COTS products		/
			Adhere to the agreement		Hire legal team.
			Accept the delivery of the appropriate product		Ensure bill and confirmations needed.
			Carry out product transport		Transport is supervised by suppiler.
	Measurement and analysis	Conduct activities of measurement and analysis	Determine the objectives of measurement and analysis		Prioritaze information needs and objectives.
			Precisely determine the measures		Define standards from analysis and measures.
			Precisely determine the procedures for collecting data and data storage		Data will be stored in database.
			Precisely determine analytical procedures		Design measuring and statistical algorithms.
		Provide results of measurements	Collect measurement results		Document tall results and store hem in database.
			Analyze measurement results		Compare them with standard and analyze.
			Store measurement results		database
	Process and product Quality assurance	Execute objective evaluation of processes and work products	Objectively evaluate the processes		Processes must match ones described in project plan.
			Objectively evaluate products and services		Products must match specification of demands.
		Provide objective insight	Connect and provide solutions to problems which came out due to incompatibility		Track all risks , and react fast in case of issues.
			Provide notes		Document every phase.
3	Risk Management	Do preparations for risk management	Determine risk sources and categories		1. Software companies declining collaboration 2.. Not enough money for all phases
			Define risk parameter		1. Success of project 2. quality
			Define risk management strategy		1. Use high level convincing techniques 2. Hire an economic expert to design a good plan for spending.
		Identify and analyze risks	Identify risks		1. Project failure 2. Quality decreases, project failure
			Categorize and prioritize risks		Risks are mentioned above in order based on priority.
		Mitigate consequences of risks	Develop risk mitigation plan		1. Plan a different contract 2. Plan dissemination
			Apply risk mitigation plan		1. Try to make a different contract 2. Do more marketing in order to get more investors
	Integration	Determine	Identify tasks		/

	unification	team structure	Identify necessary knowledge and skills		Every team leader needs to have information about level of knowledge of every member of their teams, also every team member needs to know what their colleague knows.
			Identify team members		In charge team leader for tasks there are best to complete.
		Manage team work	Establish common environment		/
			Establish product environment		/
			Define roles and responsibilities		/
			Establish working procedures		/
			Collaborate with interface teams		/
	Integrated supplier management	Analyze and choose suppliers	Analyze potential suppliers		Suppliers will be selected on tender/
			Evaluate and choose suppliers		Partners which is selected on tender.
		Coordination of work with suppliers	Monitor work activities of selected suppliers		/
			Evaluate work products of selected supplier		/
			Review the agreement and relationship		Check all licenses and agreements.
	Product integration	Execute preparations for prodpuct integration	Determine Integration flow		Set deadline to integrating all modules into one, checking quality of intrated model.
			Establish a proper integration environment		Provide seminars attending.
			Establish integration procedures and criteria		All modules must be functional and well tested before integration.
		Provide interface compatibility	Perform a revision of interfaces description		/
			Interface management		Keep with system design.
		Complete folding and delivery of the product	Confirm the readiness of components for integration		All test unit needs to be well tested before integration.
			Assemble components		Integration procedures followed.
			Execute evaluation		Test whole system.
			Pack and deliver the product and components		Send data to testing team.
	Verification	Execute preparations for verification	Select working products for verification		Integrated system and initial project plan
			Set up verification environment		Provide all recourses which is necessary for verification process.
			Establish procedures and criteria for verification		Verify that product fullilled all requirements.
		Execute professional evaluation	Prepare for professional evaluation		Assing team for this role.
			Conduct professional evaluation		Team needs to eveluate system.
			Analyze professional evaluation and data		Gather and analyze data.
		execute verification of	Execute verification		Confirm success or failure of each test.

		chosen work products	Analyze results and identify correction actions		Document all success/failure data and reasons (in case of failure)
	Validation	Execute preparations for validation	Choose products to validate		Verify that the system meets customer expectations
			Set up validation environment		Provide all recourses which is necessary for validation process.
			Establish validation procedures and criteria		Verify that product final product fullilled all requirements.
		Execute verification of product and its chosen parts	Execute validation		Do validation
			Analyze validation results		Document all satisfy/unsatisfied data and reasons (in case of unsatisfied)
	Organizational training	Determine possibilities of organization for conducting training process	Determine training needs		Train all team members to properly use system
			Identify needs within the organization's competence		Correct use of system is of significant importance to system performance, thats why customers need to be train
			Define training plan		Team members will undergo to specialcources. Coustomers learns from tutorials
			Establish possibility of training		Online coures and workshops.
		Execute necessary training	Execute training		Hire people which will train team members
			Keep training records		Document training efforts
			Evaluate training effectiveness		Determine attendance of the training
	Organizational process definition	Determine favorable circumstances of the process on level of organization	Establish standard processes		Dividing participants into teams and select team leaders and whole structure.
			Establish model descriptions		/
			Set up tailoring criteria and instructions		Adapting projecte to new work environment.
			Establish a set of measurements at the level of organizations		Define quality measure and make comparations during development.
			Establish a library of favorable circumstances		/
	Organizational process focus	Determine possibilities for process improvement	Establish the needs of organizational processes		Define look at the end of the project
			Evaluate organizational processes		Find strategy to improve system
			Identify improvements		Document each idea which is approved.
		Execute planning and implementation of actions for improving organizational processes	Set up plans to take action		Make a detailed plan for executing actions.
			Implement plans		Use upper mentioned action plan
			Use improvements and favorable activities		Founded Improvements wiil be used to make batter version
			Embed acquired knowledge and improvements		Share experiences with other teams, in order to avoid repeating same errors and to use good things from now on.
	Integrated project management	Use defined process for project	Establish defined process		Project leaders will be in charge for management of entire project
			Use favorable planning circumstances for project activities		Team leaders will be in charge to present the progress of the teams to project leaders.
			Integrate plans		

			Manage project based on plans		/
			Improve a set of favorable circumstances		/
		Collaboration with important suppliers	Manage the participation of investors		Keep track of all investors in project and make detailed documentation on each investment.
			Manage dependent relationships		Provide some commercial due to size of sponsorships.
			Solve coordination problems		If there is problem in collaboration with sponsors, detect it and quickly remove them
		Use mutual understanding for IPPR	Define context of common understanding		/
			Establish common understanding		/
		Organize integration teams for IPPR	Organize the team structure within the framework of project		/
			Provide preliminary distribution of requests to appropriate teams		/
			Establish teams		/
	Decision analysis and resolution	Do evaluation of alternative solutions	Establish guidance for decision analysis		Define ways to change decision in system development.
			Establish evaluation criteria		Performances, accessibility and customer satisfaction.
			Identify alternatives		/
			Choose evaluation methods		Testing
			Execute evaluation		The assessment is based on a sample of people.
			Choose solutions		Determin which solution is best for improving old solution.
	Organizational integration environment	Provide IPPR infrastructure	Establish shared understanding on organization level		/
			Establish working environment for integration		/
			Identify unique skills as support		/
		Manage people	Establish leadership mechanisms		Set responsibility which every team leader needs to fulfil.
			Establish stimulus for integration		Team building. Develop strategies for motivating workers: wage bonuses, rewards for most valuable and hardworking.
			Establish mechanisms for balancing responsibility		Develop strategies for penalizing workers : cutting of wages, increasing number of working hours...
4	Organizational process performance	Establish base lines for performance and models	Choose processes		Make a list of all processes, whose performances have greatest impact on the entire system.
			Establishing measures for process performance		Define properties that show performances of those processes and their flaws in best way.
			Establish goals for quality and performances of process		Determine the allowed deviations with which system can still work properly.
			Establish baseline for process performance		/
			Establish		/

			process performance models		
	Quantitative project management	Quantitative project management	Establish project goals		Design a document that will list all goals of our project and elaborate them with details.
			Compose defined process		This document contains detailed analysis of all processes and functionality.
			Select sub processes to which statistical management will be applied		/
			Manage project performance		/
		Statistical management of sub processes performances	Choose techniques for analysis and measurement		/
			Apply statistical methods to better understand the variations		/
			Monitor performance of the selected sub process		/
			Record specific management data		/
5	Causal analysis and resolution	Determine defect causes	Determine causes of defects		Use all documentation written during system development to identify all defects.
			Analyze samples		Analyze all causes of defects and if there is repetiton of same defect, try to better understand it.
		Address defect causes	Implement action suggestions		Implement techniques for avoiding causes of bad IS performance.
			Estimate the effects of changes		Analyze impact of changes mentioned above
			Record data		Make a detailed documentation.
	Organizational performance management	Business performance management	Maintain business goals		Maintain business objectives based on an understanding of strategies and preformance.
			Identify and analyze innovations		Document each idea elaborated on short-idea-meeting described above and process it properly.
			Analyze data for process performance		Perform analysis and validate performance of IS.
		Choose improvements	Discover suggested improvements		Schedule several meetings in late phases of project, in which we will discuss possible improvements of the system.
			Analyze suggested improvements		Make a detailed analysis of suggestions elaborated on meetings mentioned above.
			Validate improvements		Confirm that those improvements do not harm desired behavior defined by gathered participant and user requests.
			Select and implement deployment improvements		For every new plan assigned them team which fill implement it.
		Conduct improvements	Plan deployment		Plan a system with all improvements and prepere it for delivery.
			Manage deployment		Every improvement and change in system needs to be documented.
			Estimate improvement effects		Determine contribution off e ach improvement. Is it, at the end, bigger than its cost?

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