ID	Research topic	Types of patterns	Concrete security patterns dealt with	Concrete abuse/threat/attack patterns dealt with	Relationships among patterns (Yes, no)	Requirements for traceability (imply or explicit)	Vulnerability and threats addressed	Quality Measurement	Pattern modeling/description notation	Intended dev. Methodology	Evaluation	Phase/lifestage	Customer/user of research (i.e., Viewpoint)	Tooling/automation	Platform dependence (E.g., Cloud, EJB, …)
12		Security patterns	Authentication, authorization, RBAC		N/A		N/A	N/A	SPEM for process, Java/AspectJ code	Model driven methodology	Example	Requirements, analysis, design, implementation	Security specialist, software designer		EJB platform
13	Classification of security patterns, Survey	Security patterns	N/A	N/A	N/A		Threat modeling	Classification quality metrics	N/A	N/A	N/A	Any	Software designer	N/A	N/A
14		Security patterns, threat patterns	Authentication, Secure two-party communication		Yes		Unclear	Unclear	UML-like	N/A	Example	Requirements analysis, design	Security specialist, software designer	N/A	N/A
15	security methodology engineering	development process patterns		N/A	Yes		N/A	N/A	pattern language	methodology engineering	None	All	developers, architects and researchers	N/A	N/A
16		Security patterns	N/A	N/A	Yes		Confidentiality, availability	N/A	UML, aspect template	MDD, AOP (aspect-oriented programming)	Example	Analysis, Design, Implementation	Developer	N/A	N/A
17	Knowledge base design for secure SD	Security Architectural, Design, Idiom		None	Yes		Confidentiality, Accountability	None	Ontology	None	None	All	Developer	Ontology query language	Not specified
18		Design	Not specified (general pattern repository)	None	No		Not Specified	CVSS	OWL	MDD	None	Reengineering, Evolution	Redeveloper	MDA, Protégé, OWL API	Legacy systems
20		web security context patterns	TLS indicator	phishing	y		Unclear (confidentiality, integrity)			No		simple example	UI design	designer	No	
21		security pattern	RBAC (as an example)	N/A	No		Unclear (confidentiality, integrity)	N/A	UML class diagram	N/A	simple case study	design and implementation		eclipse FW, Dresden OCL, ATL	N/A
22		Tactics, architecture patterns, Authenticator	Authenticator		Yes		Resisting, Detecting, Recovering	N/A	N/A	N/A	Example	architecture design	Architect	N/A	N/A
23	Methodology using security patterns	Security patterns	analysis pattern,RBAC pattern,		Yes		Confidentiality	N/A	UML	Secure Software Lifecycle, Model Driven Development	Example	Requirements, Analysis, Design and Implementation	N/A	general
25	Classification of Security Patterns and the validation	Security patterns	Secure Communication Patterns		Yes		Confidentiality	N/A	Original Protocol Specification	N/A	N/A	Design	Security specialist, software designer	Verification Tool	N/A
26	Classification of security patterns	Security patterns	XACML, Access Control Evaluator Pattern	N/A	No		N/A	N/A	N/A	N/A	N/A	Design	Developer	N/A	N/A
28	Classification of security patterns	Security patterns, attack patterns		N/A	Yes		CIA + accontability	Yes	Template, structured document	N/A	N/A	Requirements, design, implementation	Developer	N/A	N/A
30	aspect-oriented programming, security pattern development	security patterns	Authorization, RBAC	n/a	No		availability		n/a	Aspect-oriented Programming	None	design, requirement	developer, security specialist	no	N/A
32	Secure software engineering, database design, authorization	security patterns	Web Presence, Business-to-Customer, Operational Security	N/A	No		Confidentiality	Unauthorized access and use	UML, with CCL	None	Design, Implements	Database designer	no	
36	Security framework	Security patterns	SecurePipe, MessageConfidentiality		No		N/A	repudiation	N/A	SI*, Secure Tropos	None	Design	Developer	N/A	SERENITY
37	Secure-Oriented Architecture, Web Service Security Policy	Security patterns	Reference Monitor, Circle of Trust, Identity Federation		Yes		CIA + Authorisation	N/A	N/A	Model driven, MDA	N/A	Analysis, Design	Software designer, software developer	N/A	Web Services
38		Security patterns			Yes		Not specified	N/A	UML-like	Model driven, MDA	N/A	Analysis, Design, Implementation	Software designer, software developer	N/A	SOA
39		security patterns					Confidentiality, Integrity	not mentioned	UML	MDD	Example	Design, Implementation	Software designer, software developer	N/A	SOA
40		Security patterns for access control	RBAC	N/A	Yes		Confidentiality		N/A	UML, Activity diagram to Process Model	N/A	N/A	Whole process of IAAC-system development	Developer	Yes, but unclear	N/A
41	Analysis of Existing security patterns	Security patterns		No			Availability		UML	Unclear	Example	Analysis	Security specialist, software designer	N/A	N/A
44		security patterns	security solution for systems of systems		Yes		Unclear		SPT, UML	N/A	N/A	Modeling	system (architect)	N/A	N/A
47	Business Process Management, Security Pattern Risk-Treatment, Automation	Security pattern, misuse patterns	N/A		No		Integrity, confidentiality (on the example)	Yes in ontology but a little	Yes (attribute and forces)	Proposed template	OPBUS framework	Example	Business process modeling	Buisiness analyst, security analyst	OPBUS framework extension	Unclear
48		Security patterns, misuse patterns			Yes		Unclear		Misuse patterns and in metamodel	N/A	UML, class diagram, sequence diagram and referenced in UML	Example	Requirements analysis, design, Implementation, maintenance	Cloud provider, cloud consumer	N/A	Cloud
50		Agent security patterns		N/A	N/A		Confidentiality, integrity, authentication, nonrepudiation	N/A	Protocol diagram for behaviour, reference for structure	Secure Tropos, model driven design	Case study	Design	Software developer	"AOSE" The latter is kind of model driven design tool	Multi-agent systems (MAS)
52	Comparison of security architecture patterns	Security architecture patterns		N/A	N/A		N/A	Security degree (L: Low M: Medium H: High)	UML class diagram	N/A	N/A	Any	Software developer (not security expert)	N/A	Distributed publish/subscribe systems
53		Security patterns, threat patterns		N/A	N/A		Secrecy, Integrity, Availability, Accountability		N/A	N/A	N/A	Design	Software developer	N/A	N/A
54		Security risk-oriented patterns	SRPI~5	N/A	N/A		Confidentiality, integrity, availability	Some possible attacks are considered	BPMN	N/A	Example	Business process modeling	Business analyst	N/A	N/A
55			Trusted path	N/A	N/A		Integrity (unclear but may be CIA)	Abuse the situation	N/A	SeCMER, SI*, Problem Frames	Case study (illustrative Example), experiment/workshop	Requirements engineering, evolution	Requirement analyst	N/A	N/A
57	Methodology to build secure systems using security patterns	Security patterns	N/A	N/A	N/A		N/A	Relate attacks to use cases	N/A	MDA, model driven	N/A	Any	Software developer	N/A	N/A
59	Hierarchy of security patterns and concept of abstract patterns	Security patterns, abstract security patterns		N/A	Abstraction hierarchy, usage relationship		N/A	(Threat)	UML class diagram for relationship	N/A	N/A	Any	Software developer	N/A	N/A
60				N/A	Abstraction hierarchy, usage relationship		N/A	Threat (and regulation)	N/A	N/A	N/A	Requirements engineering, analysis	Software developer	N/A	N/A
61	Smart Home, Socio-Technical Confidentiality	Security & Dependability (S&D) patterns	XACML, its three variations	N/A	Combination of patterns		Confidentiality (and integrity, availability)	N/A	N/A	Document	N/A	Design, deployment	Software developer (not security expert)	N/A	Smart home
65	Survey of security patterns	Security patterns	RBAC	N/A	N/A		confidentiality, identification and data integrity	N/A	N/A	N/A	N/A	Design	Software developer	N/A	N/A
67		Security patterns, misuse patterns	Authorization, RBAC	N/A	N/A		UML (class diagram, sequence diagram) and referenced in UML	Example	Design, implementation	Software designer, developer	Papyrus suite tool, ATL	N/A
67	Model-based secure and reliable system development methodology	Security patterns, misuse patterns	Authorization, RBAC	N/A	N/A		Confidentiality, integrity, availability, availability	Threats, misuses	A threat model leads to a system use for the end of it and leads to the next one	UML, OCL	N/A	N/A	Design, implementation	Software designer, developer	N/A	N/A
68	Architecture for Secure Ambient Intelligence Environments	Security & Dependability (S&D) patterns	N/A	N/A	N/A		N/A	N/A	N/A	Model driven	N/A	Development-time, run-time	Software developer	N/A	Ambient Intelligence Environments
70		Security (hardening) patterns	Secure Connection	N/A	N/A		N/A	N/A	UML, OCL	Model driven, aspect-orientation	Case study, experiment	Design, implementation	Software designer, developer	N/A	N/A
72		Security (hardening) patterns	Secure Connection, Add Access Control, Add Encryption,	N/A	N/A		(Vulnerability and attack)	N/A	Aspect-C++ (and Hardening Plan Template)	Any	Case study, experiment	Implementation	Software developer	AspectC++	N/A
73	Security pattern application to requirements, access control	Security patterns (reusable access control patterns)	RBAC	N/A	No & N/A		Confidentiality -> Unclear?	N/A	Problem Frame		Case study (Illustrative Example), experiment/workshop	Requirements engineering	Requirements engineer	N/A	N/A
74	Security Testing	Security patterns, attack patterns		N/A	Yes, Security patterns <base> Attack patterns		Confidentiality	STRIDE categories for threats, attack sequence	N/A	Any	Case study (Illustrative Example), experiment/workshop	Design	Software developer	N/A	N/A
75	engineering process, component based model	security patterns	RBAC	N/A	No		N/A	Misuse (minor actor in paper)	UML	SCRIP	Example	Design, implementation	Software component specialist, designer	ATL	N/A
78	business process compliance	risk-oriented patterns	Secure data from unauthorized access etc.	N/A	N/A		N/A	N/A	BPM	Case Study	?	BPMer?	N/A	BPM
79	architectural tactics	security architectural patterns		N/A	N/A		N/A	N/A	architectural tactics	experiment & hypothesis analysis	N/A	design	architect	N/A	N/A
80		security pattern		N/A	N/A		N/A	SQL injection, XSS, buffer overflow	STRIDE	N/A	N/A	design	Designer	N/A	N/A
81	チャレンジ・レスポンス認証とパターン・ランゲージ	security pattern	N/A	N/A	N/A		Confidentiality	information disclosure	OWL	N/A	N/A	Architecture, design	Designer, software developer	security pattern search engine	N/A
82	operational model	security pattern	N/A	N/A	N/A		Confidentiality		N/A	security description language	N/A	N/A	operation		N/A	XML
84	survey of security patterns	security pattern	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	researcher		N/A	N/A
88	security mechanism on requirement specification	security pattern	N/A	N/A	N/A										
90	applicability of security pattern	security patttern	secure pipes and filters etc.	N/A	N/A										
93		security pattern	reference monitor	N/A	N/A		N/A	N/A	UML use case description	N/A	Example	Design	Designer	N/A	N/A
95	UML profileを利用し、セキュリティパターンを設計した。	security pattern	active replication	N/A	N/A		N/A	N/A	UML profile	N/A	Case study	Design	Designer	N/A	N/A
96	Security Patternを用いたリスク評価	security pattern	多数	N/A	N/A		N/A	v(risk assessment)	N/A	N/A	risk assessment	Test?	Tester?	N/A	N/A
97	pattern drivenの方法	security pattern	RBAC, ABAC	None	N/A		多数 Is not mentioned clearly in paper	N/A	UML	N/A	N/A example	analysis and design	designer	distributed systems
99	Attack Surface Reduction	authorization patterns		None	Not Specified		多数 of Attack surfaces	N/A	Num. of Attack surfaces	None	Case Study	Design	Developer	None	Web apps
100	Security Service Orchestration	security pattern	Identification and authentication		Not Specified		None	None	Form (UML use case + system design model)	SOA	Example	Design	Developer	None	SOA
101	Security patterns composition using formal method	Design		None	No		None	None	CCS (a process algebra)	None	Case Studies	Design	Developer	a CWB-NC model checker	Not specified
103	consistency management among security functions	security pattern	singleton		No		None	None	UML	N/A	SPACE	Example	Requirements Analysis	Developer	Arctis (tool-set of SPACE)	Not specified
104	tool for security configuration of Web Services	security req. pattern					CIA			XML	None	None	Requirements Analysis	Developer	itself	Web Services
106	Developing a meta-model for secure cloud systems	Design		Malicious virtual machine migration process	Yes, misuse to security		Not Specified	Elements in misuse and security patterns	None	UML	None	None	Design	Developer	SAM modeling tool, SPIN	Cloud
107	Integrating patterns of different intended platform	Design		None	No		Not Specified	None	Not Specified	None	None	Design and Implementation	Developer	None	Not specified
109		security pattern	Authorization, Reference Monitor, Log/Audit		yes		Not Specified	None	UML	None	None	Analysis, Requirements, Design, Implementation	Developer	None	Not specified
113	Comparison of several types of patterns	design, attack, security	structural patterns ex. enterprise architecture, and systems	None	Yes		Not Specified	None	Formals such as Z notation	None	None	Design	Developer	None	Not specified
114	Formatting security req. patterns	Requirements		None	No		Not Specified	None	Form	None	None	Requirements	Developer	None	Not specified
116	Classifying patterns for each usage	Analysis, Design		None	No		Not Specified	None	UML	None	None	Design	Developer	None	Not specified
119	Composite patterns and verifying the composition	Design, Security pattern	Single Access point pattern (SAP)	None	No		Not Specified	None	Sercsis Access Modeller (SAM)	None	Case study	Design, Test	Developer	None	Insurance case, Biopm Decision Diagram (BDD), Catalog	Not specified
120	Formal notation for patterns	Security patterns (Design patterns)		None	No		Not Specified	None	Codecharts, LePUS3, first order logic, Z notation	None	Example	Design, Implementation	Developer	TTP Toolkit verifier	N/A
121		security pattern	SymmetricEncryptorDecryptor pattern		y		CI		UML	N/A	case study	analysis and architecture design	software engineer	UMLsec	N/A
123	Context-aware security pattern specification	Datapencryption pattern, authentication		no			no		Formal + XML expression						
124		security pattern	N/A	no	N/A		N/A	N/A	UML profiles	MDA-based	no	the whole process	non-security experts	code generation support	ex. CCM, EJB
128		security pattern		No	N/A		CIA	No	goal modeling	Goal oriented	Example	analysis	analyst	original prototype tool	
129	holistic approach to modeling composite security aspects	Security patterns	An integrated formal methods using Problem Frames and Z	Yes (composition)			Confidentiality, integrity	Password guessing	OCL constraints	Aspect-oriented development	Example	Analysis, design	Developer	Formal Design Analysis Framework (tool)	N/A
130	goal-oriented approach to creating composite security patterns	Security Architecture Pattern	N/A		no		N/A	N/A	N/A	N/A	N/A	analysis and architecture design	designer	N/A	N/A
132		Security Architecture Pattern	N/A	no	N/A		all	None	UML	no	no	Design	Architect	N/A	SCADA System
134		security pattern	Basic authentication, logger, authorization, Secure RDS and SPM		N/A				Architecture Pattern Template	original	no	analysis and design	N/A	no	
136	construction of security patterns repository	security pattern		not mentioned	no		N/A	no	template, structured		no	design and implementation	developer	no	N/A
139		security pattern		no	no		not mentioned	not mentioned	XML	Not mentioned	case study (prototype development)	implementation	developer	API	ambient intelligence (context-aware applications)
140	evaluates usefulness of security patterns empirically	security+pattern	36 pattern catalog (例: encrypted storage)	N/A	yes		depending on the patterns	not mentioned	N/A	no	case study experiment	design	software developer	ArgoUML editor	
141		security pattern		no	no		CIA		DAA (confidentiality, integrity, availability and accountability)	No, covered misuse cases		XML	no	vs	experiment	design	software developer	misuse-based Papyrus UML editor	
142	formal modeling of regulatory requirements	security pattern	N/A	N/A	no		validation using visualization	not mentioned	UML	N/A	yes	architectural design and detailed design	architect	UML editor (customized Eclipse environment)	N/A
148		security pattern		no	no		no	not mentioned	formal modeling	N/A	not yet	design	software developer	Alloy	N/A
151	security patterns in cloud service	Security patterns, misuse patterns	anti CSRF pattern	improperly configured redirector	no		Confidentiality		misuse case, threat model activity diagram	N/A	yes	design, implementation	software developer	N/A	N/A
152	Security analysis with misuse activities	Security patterns, threat, security policy	as examples, RBAC, event logging	illegal money transferring	Yes		confidentiality, integrity, availability, and accountability	Some example threats are shown	N/A	N/A	N/A	Design	Security specialist, software engineer	N/A	N/A
154	Methodology using security patterns	Security patterns	Authorization pattern	N/A (only attack scenario)	no		confidentiality, integrity, availability	N/A	UML	methodology	N/A	Requirements, Analysis	Security specialist, software engineer	N/A	N/A
155	security requirements pattern	security patterns	RBAC (as an example)	N/A	no		Confidentiality		j# base method	j# base method	requirement	designer, analyst	j# + manual	N/A
156	Security pattern extension for Smart home security	Security patterns	Authorization	N/A	N/A		Confidentiality	N/A (it cover level vulnerability based on our attack survey)	UML	N/A (implementation)	requirement	Developer	XACML (Web service)	
159		security patterns, misuse patterns		N/A	N/A		Confidentiality, integrity and availability	Yes	UML	MDD	N/A	Design and Implementation	Developer	N/A	N/A
160		security patterns	non-repudiation	N/A	no		Confidentiality, non-repudiation	no	UML	MDD	N/A	development	researcher	yes	Web services
161	security pattern及びsecurity grammarの提案	security pattern	Security pattern全般	N/A	N/A		Condentiality, integrity, availability	N/A	N/A	N/A	N/A	Design	designer	N/A	N/A
163	enterprise security patternの提案	security patterns	secure SaaS	N/A	Yes		Confidentiality, integrity, availability	N/A	N/A	N/A	v (case study)	requirement	analyst	N/A	Cloud
164	enterprise security pattern	security patterns		N/A	N/A		Confidentiality	N/A	diagram	MDD	N/A	development	designer, analyst	N/A	EA
166	security pattern and attack pattern	Security patterns, attack patterns	Context Policy Management	Test Footprinting attack Pattern	N/A		Confidentiality, Accountability	yes	diagra, KAOS	CAIRIS	Example (webinos)	Design	designer	CAIRIS tool	N/A
168	pattern based devepopment method	security patterns (+ vulnerability patterns)	RBAC	N/A	N/A		Confidentiality, Integrity, availability	yes	original, relational, Application Knowledge Modeling	(AKOM) framework	v (case study, controlled experiment)	Design, analysis	DB Designer	Security Modeling Tool (SMT)	DBMS
169		security patterns (+ vulnerability patterns)		no	N/A		Confidentiality	no	N/A	N/A	N/A	design, analysis	designer	N/A	N/A
170	architecture of MTA and security patterns	security patterns	N/A	N/A	no		Confidentiality, availability	yes	N/A	no	no	design, analysis	designer	N/A	N/A
171	case study of security patterns	security patterns	E-RBAC, Single Access Point, Check Point,	N/A	N/A		Confidentiality	N/A	UML	N/A	v (case study)	design, analysis	designer	N/A	N/A
172	UMLアーキテクチャにsecurity patternを導入	security patterns	Single Access Point pattern, RBACK, Check Point security,	N/A	no		Confidentiality	N/A	UML	N/A	v (case study)	design, analysis	designer	N/A	N/A
174	Formalizing security patterns	Security Patterns	N/A		N/A		N/A	threat modeling with anti-statements	formal modeling	N/A	v	the future, code generation and automated verification	system's core participant	no	Java
176		security patterns in Trusted platform using TPM (Secure at the end of life)	N/A		N/A		no	no	Original modeling notation like sequence diagram	development using TPM	no	development and at run time	PC, LAPTOP, PDA, cellphone	no	TPM
179	security term to expose code with security violations	security pattern	as pattern violations		N/A	Yes		no	as pattern violations	no	formal modeling for alloy	N/A	Yes	static check	security police maker	SPACE(Security Pattern Checker)	Ruby
181	Security Patterns Modeling Using Petri Nets	Security Patterns	Information Secrecy, Secure Communication	no	N/A		N/A (I => eavesdrop)	no	petri nets	model driven, ?	no	design==implementation	developer	Yes	multi-agent system
187	Pattern language for security	Security Patterns		no	Yes		no	no	Hierarchical Scheme	N/A	no	development	Pattern User	no	N/A
192		security patterns	no		yes		authentication, authorization, authentication	yes	UML, XML	spring security	no	design, implementation	developer	Yes	spring framework
196		security patterns	no		yes			no	D-Case diagram		no	requirement, design, implementation, testing	developer	no	N/A
197	development and test using security design patterns	security patterns	authentication enforcer		no		access control, availability, authentication	yes	UML, OCL			implementation	developer		N/A
198	classification of security patterns	security patterns	no		Yes			no	UML	aspect oriented	Yes (modularity)	development	developer	N/A	N/A
200	electronic invoice, security pattern	security pattern	no		no		authentication, authorization, non-repudiation, availability	yes	security pattern classification scheme	n/a	Yes example	analysis, design	Pattern user	no	
201	classification of security patterns, attack patterns	security pattern	no	application integrity, data confidentiality	Yes		integrity, confidentiality	no	no	no	Yes example	requirement	developer	Yes, the tool "MUSER" is used	
210	Network architecture style specification	Requirements Patterns for Network Architectures	High-Volume Traffic Challenge	no	Yes (conflict among policies)		Availability	DDoS	Network policy specification (PonderTalk)	no	Example	Analysis, Architecture design	Network system engineer	N/A	Network policy configuration
213	security measurement, security pattern	security patterns	directly via the use of UML model; authentication and authorization	misuse pattern, threat pattern, attack pattern	yes		misuse pattern, threat pattern, attack pattern	yes	UML	no	model checker	Analysis, design	developer		N/A
220	security pattern, model checker	security patterns	security pattern, authentication enforcer, authorization	no	no		confidentiality	no	UML	model checker (tool? referenced in paper (called SLS))	implementation	developer, designer		N/A
221	model driven development	security patterns	UML Pattern, Authorization Pattern, Reference Monitor	no	no		no	UML	n/a	no	design	developer	ATL	
222	security design patterns, reusable models	security pattern		no	no		n/a	no	UML	n/a (to implement)	no	design	developer	no	
224	security pattern, Contextual Goal Models	security patterns	Authenticator		no		confidentiality (<- authentication pattern)	no	no	aspect-oriented	yes	design, analysis	designers, analysts	AspectJ, ArgoUML, FDAF tool support	Protegé
225		EU-SERENITY Security and Dependability (S&D) patterns	no (Ex. Authorization Pattern)		no		non-repudiation	no	UML (for security)	no	yes	design, analysis	designers	vs	
228	Introduction of misuse patterns	security patterns	security patterns, security policy	Misuse patterns(DoS, Theft of Service)	Yes		availability	yes	Tropos (SI*, OWL, SWRL, SPARQL, SQWRL, …)	aspect-oriented	yes	During design and if threats has happened	designers, evaluators	Protegé	
231	Represent security with NFR or QRL	security patterns	Secure(Static) Access Point, Check Point, Role	no	yes		integrity, availability, privacy	no	Tropos	agent-oriented software engineering (AOSE)	yes	Requirement, design, architectural design	pattern users	no	N/A
233		security patterns	no (but several misuse "cases" are shown)		no		confidentiality, integrity	yes	no	Goal-oriented Requirement Language	no	no	requirement, design	pattern users	no	N/A
234		security patterns	User Authentication, Service, Access Control (RBAC)		no		confidentiality, integrity	yes	natural language, SHL (with no concrete example)	AOP (Aspect-Oriented Programming)	experiment	design, development, deployment	security experts, developers	AspectJ	N/A
235		security patterns		no	no		confidentiality, integrity, availability		UML, class diagrams and sequence diagrams	no	no	design	designers	no	
238	evaluation combines context and external software architecture	security patterns	Pattern users		no		confidentiality, integrity, availability		natural language	no	no	all	architects, designers, developers	no	
240		security patterns		no	no		confidentiality, integrity, availability		Horizontal Meme Transfer, Bow Tie Processor	no	no	no	pattern users	no	
242		security patterns		yes	no		confidentiality, integrity, availability	yes	natural language, KAOS, Secure ile-sequence, Secure Tropos	no	no	design	designers	no	
247	クラウドベースのエコシステムについて、UMLを用いてパターンを記述	Security Pattern		N/A	no => partially yes		confidentiality and integrity	no	UML	N/A	? No	Design	Service provider ?	N/A	N/A => cloud-based ecosystem

#															
249	security patterns	securiy pattern	テーブルにて分類	no	confidentiality, availability, integrity	yes	N/A	N/A	N/A	no	development and at run time	programmer	N/A	N/A	
252	セキュリティ…NIST RBAC	access control	N/A	no	N/A	N/A	N/A	N/A	N/A	no	design	N/A	N/A	N/A	
253	Security knowledge base for education	Security pattern	N/A	Attack patterns	Yes	N/A	Vulnerability	N/A	N/A	no	Analysis, design	Students	Knowledge base	N/A	
254	…	Security pattern	Thread model	threat	no	Not specified	None	N/A	N/A	N/A	no	N/A	N/A	N/A	N/A	
256	…	privacy pattern	registration, input personal information	N/A	no	confidentiality, availability, integrity	N/A	N/A	N/A	N/A	no	N/A	N/A	N/A	N/A	
257	…	Security pattern	N/A		attack pattern (STRIDE)	no	Not specified	N/A	Fuzzy methodology	N/A	n/a	no	Design	N/A	N/A	N/A
270	…								N/A Model driven architecture		STRIDE _examination	N/A	N/A	N/A	N/A
271	security pattern	Web services Unclear	no	no	Not specified Confidentiality, Integrity, NonRepudiation	no	UML, formal modeling, Web Services Choreography Description language	N/A Model driven architecture	no	N/A	N/A Developer	N/A	N/A Web Service	
272	security pattern		misuse		confidentiality, availability, integrity, authenticity, non-repudiation, accountability	no?	N/A	UML	N/A	no	Analysis	Enterprise IS Division	N/A	N/A	
279	…	security pattern		no	accountability	no	N/A	N/A	formal modeling	N/A	feasibility, usability, correctness,	service provider?<designer>	N/A	N/A	
280	セキュリティ攻撃手の順に、具象に対して緩和策を検討する	security pattern	N/A	four attacks (detect, stop or mitigate, react, recover)	no	N/A	no	N/A	N/A	N/A	design	N/A	N/A	N/A	
281	…	security pattern	N/A	N/A	N/A	no	N/A	no	UML	N/A	design, coding	programmer	N/A	N/A	
282	A Tool to Gen. Control of Security Requirements Evolution	N/A	N/A	N/A	Not specified (Confidentiality?)	N/A	N/A	N/A	SI* Problem Frames (PF), SeCMER	N/A	requirement analysis	Developer	Yes	N/A	
284	security patterns	None	None	Integrity, Confidentiality, Non-repudiation	none	none	UML	MDA	Yes (case study)	Design, realization	Developer	none	Web Services	
285	security patterns	Authorization pattern, RBAC	N/A	N/A	Integrity, and confidentiality	N/A	N/A	UML	MDD + CBSE	case study	Design	developers	N/A	N/A	
286	security patterns	N/A	Yes	Confidentiality, Integrity, Availability	N/A	N/A	UML	N/A	case study	analysis, design	developer	Yes	Not specified	
289	security patterns		No	No	Integrity	N/A	N/A	UML	Not specified	N/A	Domain analysis, Requirements, Analysis	Developers	N/A	N/A	
290	security patterns		N/A	No	CIA	N/A	Y?	Not specified	Not specified	No	Not specified	security pattern community	N/A	Not specified	
292	…		N/A		availability		text	N/A	N/A	Yes (case study)	design, implementation	developer	PHP	
293	Software security problem ability patterns (S&D pattern)	interceptng validator	PW-based device identification, Zero-based security measurement	N/A	Confidentiality, integrity, availability	increase input validation (such as SQL injection and XSS)	N/A	UML	SERENITY approach	N/A	Analysis, design	Developer	SERENITY model	AmbientIntelligence 29 (AmI) ecosystems	
295	security patterns		N/A	Yes	Integrity		You (There is only a reasonable level of security measures) from around the survey?	UML	N/A	Yes	Pattern community, developer	N/A	
298	security patterns		None	yes	Confidentiality, integrity and availability	no		UML	N/A	Yes (case study)	design	designer	yes (UML based tools for code generation)	Web Services
301	Proposal of a dynamic testbed for security pattern evaluation	N/A	N/A	Yes	Confidentiality	no	no	N/A	Not specified	Proposal of a dynamic testbed system for evaluation security pattern	N/A	Developers	N/A	N/A	
302	…		N/A	Yes	integrity, confidentiality	N/A	N/A	Text, formula	Not specified SPL	No	Pattern community, (developer?)	N/A	N/A	
303	…	N/A	N/A	N/A	Confidentiality, Integrity, availability	N/A	N/A	N/A	N/A	No	architecture design	Pattern community, (developer)	N/A	N/A	
304	security patterns		N/A	no	confidentiality, integrity, and availability	N/A	N/A	Not specified		No	Secure analysis, Requirement, Analysis, Design, and Implementation	Developer	none	no	
305	security patterns		N/A	No	all	not specified	no	UML	Not specified	yes(case study)	design	developer(designer?)	none	N/A	
306	Building a network of security foundations to look it detailed the security foundations	security patterns	Packet Filter Firewall Pattern	N/A	Yes	N/A	Confidentiality	N/A	text	Not specified	N/A	Design	designer	none	N/A
308	Security pattern integration for security and authentication	security patterns	Green Encryption, Web Decryption, Open-Based Access Control	N/A	Yes	availability?	N/A	N/A	Structured document, pre/post conditions	N/A	Analysis, design	Developer	N/A	Wireless sensors	
311	security patterns			Yes	availability?	N/A	N/A	N/A	UML?	N/A	Implementation	developer, designer	N/A	N/A	
312	Security patterns modeline and formalization	Security pattern	N/A => Secure Communication Pattern (SCP)	N/A	N/A	N/A => data authenticity	N/A	N/A	Formula	N/A => MDE (Model Driven Engineering)	Discussion => example (ITS)	Algorithm => design	Security system developer	N/A	
316	security pattern		N/A	N/A	Yes	availability?	N/A	N/A	text	MDA	development	Developer	N/A	N/A	
317	not found														
318	…	Security patterns	SecurePipe, MessageConfidentiality, MessageIntegrity		N/A	Confidentiality, integrity	Malicious content based attacks, Protocol misuse	N/A	N/A	Model-driven process modeling	N/A	Process management	Process designer	N/A	Service-oriented Business Process Management
319	…	Authorization pattern	N/A	Yes	authorization	N/A	N/A	N/A	UML	MDA	case study	design	designer	N/A	Distributed system
322	An automatic selection approach for security patterns	security pattern	N/A	Yes(classification)	N/A	N/A	N/A	N/A	N/A	N/A	Experiment	design	designer	automatic method	
324	Ontologies to unite security and dependability (S&D) pattern	security and dependability (S&D) pattern	N/A	N/A	N/A	N/A	N/A	N/A	model-driven	N/A	Design, implementation	Developer	SERENITY Run-time Framework used	N/A
325	Security & dependability pattern (S&D pattern)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	model-driven	N/A	Whole development Life-Cycle	Experts	Serenity Methodology	
326	support a conceptual model for building secure systems	security and dependability (S&D) pattern	N/A	N/A	N/A	N/A	N/A	N/A	model-driven	Case study	Implementation	Requirement analyst	SERENITY Run-time Framework used	N/A
330	the use of security patterns for audit automation	Security patterns		Yes (Fig. 1)	Confidentiality, Integrity, availability (especially integrity)	N/A	N/A	UML	N/A	N/A	Implementation	System administrator (or auditor)	audit automation	N/A
331	the check point security pattern	Check Point security pattern		Yes	N/A	N/A	N/A	N/A	Codecharts	N/A	Analysis or Design	Security specialist	use Two-Tier Programming kit	N/A
335	Security in architecture design	Security patterns		Yes	N/A	N/A	N/A	N/A	N/A	case study	architecture	Software designers	N/A	N/A
336	body of knowledge regarding software security	both	none(包括)	none(包括)	Yes	N/A	XSS, SQLinjection	N/A	UML	!	N/A	none	none	N/A	
338	long term archiving security patterns	Security patterns	generic solution patterns		Yes	integrity and authenticity	N/A	N/A	N/A	case study	Analysis	Security specialist	N/A	N/A
339	a testing tool of security patterns	both	Security Requirement patterns	一般的	Yes	N/A	N/A	N/A	UML	N/A	experiment(exercise)	Requirement or architecture	Software designer	model testing tool	N/A
340	the credentials pattern	Security patterns	credentials patterns		No	availability	tampering or disclosure	N/A	UML	N/A	Example	architecture	Software designers	N/A	N/A
341	The history-based authentication pattern (in IoT)	Security patterns	Authentication patterns	None	Yes	Confidentiality, availability, authentication	N/A	N/A	UML	N/A	Example	Operation and maintenance	service provider	N/A	N/A
342	Mitigating security patterns and best practice for the SOA	Security patterns (and attack pattern)			Yes	Confidentiality, integrity	N/A	N/A	UML	N/A	Example	Requirement, architecture, implementation	Software designer or security specialist	N/A	N/A
343	Pattern language for security patterns	Security patterns	none(包括)		Yes	N/A	N/A	N/A	Pattern Language	N/A	N/A	Architecture, or operation and maintenance	Software designer or security specialist	N/A	N/A
345	application of process for Web Service Security	both	none(包括)	none(包括)	Yes	Confidentiality, integrity	N/A	N/A	PWSSec(based on UML)	N/A	case study	architecture	Software designer	support to PWSSec process	N/A
347	An security for SCADA (super micro control and data acquisition) system	Security patterns	architecture pattern for SCADA communication		No	Confidentiality, integrity, availability, authentication, etc.	N/A	N/A	UML	SCADA security	N/A	Implementation	Security specialist	N/A	SCADA System
348	the security peaks model	Security patterns	architectural security pattern for co-developers		Yes	N/A	N/A	N/A	N/A	security twin peaks	discussion	architecture	Software designer	N/A	N/A
352	…		Yes	Unclear	N/A	N/A	N/A	Unclear	Critique	Unclear	Encryption	N/A	Unclear	
354	Security pattern, Threat pattern	RBAC, etc.	Spoofing, etc.	Yes	Unclear	Unclear (Threat pattern)	N/A	N/A	Unclear	Example	Unclear	Service provider	N/A	Cloud	
355	…	Security pattern	N/A	No	Confidentiality, Integrity and Availability	STRIDE	N/A	N/A	Unclear	Case study	Unclear	Threat assessment	N/A	Cloud
358	…	Security pattern	N/A	No	Unclear (N/A)	N/A	N/A	N/A	UML profile	Component-based software engineering, MDA	Example	non-security specialist	N/A	Component-based software
359	Security patterns system-driven pattern classification	Security pattern	N/A	Yes	Unclear	N/A	N/A	N/A	N/A	Unclear	Development and operation	Developer and operator	N/A	N/A
360	Conceptual framework for security patterns (the survey)	Security pattern	N/A (the survey on ways of organizing security patterns)	No	Confidentiality, integrity and availability	N/A	N/A	N/A	N/A	Unclear	Unclear	Unclear	N/A	N/A
362	Security pattern integration	Security pattern	SSL, TPM	N/A	Yes because of integration	Confidentiality and integrity	N/A	N/A	Formula	Unclear	Example	Unclear	Unclear	N/A
363	MOF+QVT, Domain Architecture, Model Driven Security	Security pattern	RBAC	N/A	Yes as metamodel	Confidentiality and integrity	N/A	N/A	UML	MDA	Example	Unclear	Unclear	EMF(MOF-QVT), ARCSTYLER	Unclear
364	Pattern-Based Security Methodology, Secure Information System	Security pattern, misuse pattern	N/A		No	Availability	Misuse pattern	N/A	SPEM	N/A	Entire	Unclear	Unclear	Unclear	
365	…	Security pattern	Authentication, authorization, encryption	N/A	No	Confidentiality and integrity	N/A	N/A	UML	Unclear	Unclear Development	Unclear	N/A	Unclear	
366	OWASP, information security audit, security patterns identification	Security pattern	N/A	No	Confidentiality, integrity and availability	Yes but a little	N/A	N/A	Problem frame, UML	Business process modeling	Requirements analysis	Unclear	N/A	Unclear
367	…	Security pattern	N/A	No	Authenticity, Confidentiality and integrity	N/A	N/A	N/A	Twin peaks model	Unclear	Scenario	Requirements	Unclear	N/A	
368	Security pattern integration for secure development processes	Security & dependability pattern (S&D pattern)	N/A	No	Confidentiality, integrity, availability, etc.	N/A	N/A	N/A	UML like	Unclear	Scenario	Requirements analysis, design, implementation	Developer (programmer)	SERENITY Run-time Framework used	N/A
375	Usability and Security patterns	Usability & Security	Explicit user audit N/A(not concrete)	None	Yes	Availability, popularity	None	Percentage of popularity and applicability	None	N/A	Experiment	Evaluation	N/A	Developer	N/A
377	Universal and Compose Web Service Protocol Framework for Security Patterns	Web security patterns	N/A	None	Yes	Confidentiality, integrity	N/A	N/A	UML	UML modeling	Example	Unclear	Developer	N/A	Web Services
378	Security evaluation of real time systems	Reference Monitor pattern	TCB subset security pattern	None	Yes	Mandatory Access Control	None	Trusted Network Interpretation	UML	N/A	Example	architecture design	Developer	N/A	Web Services
379	Authentication of Grid Systems	Authentication Patterns	Signature pattern, Inherited Certificate pattern	None	Yes	Trustworthiness	None	Signature and password authentication	Virtual Organization	Cloud	Trusted Computer System Evaluation Criteria	Evaluate the design space	Users in Security Centre	Grid users	Grid Operating System
380	Associates security metrics to security patterns	Security Patterns	Authentication Enforcer, Secure Logger, Audit Interceptor	Deals with hostility of the environment	Yes	Integrity, Confidentiality, Availability	black box metrics not considered	security objectives of a system	from objectives -> patterns -> metrics	dependency tree			ATM example	
381	Usage of patterns in the development of secure systems	Authentication Patterns	Misuse pattern	Misuse Activities	Yes	Access Control	Threats to a particular resource	Dimension Graph	UML	Metamodeling	Multidimensional Classification	Analysis, Design, Implementation	End-users of the system	UML and OCL tools	SQL based systems
382	Prioritization of patterns involved in all software development phases	Software Process Security Patterns		ThreatAssessment, VulnerabilityAssessment	各開発フェーズのパターン利用や優先度に対して行うSMTフレームワークの適用	Security(Unclear or no)	Assess Threats, Assess Vulnerabilities	security objectives, attacks to availability, non-repudiation	Rational Unified Process (RUP)全Processを対象	Prioritization of Process Areas(case study)	Software Development Lifecycle			SMT-TOOL, PRIMA-TOOL, PMT-TOOL	SMT Framework
383	Validation of security patterns using model testing	Authorization pattern (Security pattern)	Role based access control pattern	None	Yes	Security	None	None	UML and UCL	N/A	OO design	under graduate and post graduate students	UML	None
385	Validation of security patterns using model testing	Security design patterns	Role based access control pattern	None	Yes	Security Requirement patterns, Security Design patterns	None	None	UML	Test Driven Development	None	Testing	System users	USE
386	Validation of security patterns using test template	Security design patterns	Role based access control pattern	None	Yes	Security	None	None	UML	Test Driven Development	Test template	Testing	None	Model-based Testing tool	None
387	Pattern categorization	Security patterns	Abuse pattern, Leaks, Disclosure, Tampering	Abuse, Leaks, Disclosure, Tampering	No	Confidentiality, integrity and availability	OWASP vulnerability categorization	N/A	N/A	None	None	Unclear	developer, security specialist	N/A	None
388	Proposed 8 new web security analysis patterns	Web security patterns	Abuse pattern	N/A	Yes	I &A authorization, access control, logging	Unauthorized use, Unintended use, DoS	None	None	None	None	None	user	None	None
389	Usecase model	Security pattern	RBAC	N/A	N/A	Confidentiality	N/A	N/A	N/A	N/A	Analysis, Design	Developer	N/A	N/A
391	Apply pattern approach to XML security context	XML based security pattern language	Security of XML, document pattern, XML for security function	None	Yes	Security	None	None	None	XML	XML Digital Signature	None	indirect users of XML	any XML tool	any platform