NaPiRE 2017/18

Project ID 400193

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List: [1] "NFRClasses", dynamic

Used in questions:

- How do you document each type of non-functional requirements selected in the previous question?

List element no.; Meta information; Assign to list, if; Wildcards

1;Source variable (of the selected source project): v_97 (Compatibility (e.g., co-existence, interoperability));if selected always list element;[1] Compatibility (e.g., co-existence, interoperability)

2;Source variable (of the selected source project): v_98 (Maintainability (e.g., analysability, modularity, modifiability, reusability, testability));if selected always list element;[1] Maintainability (e.g., analysability, modularity, modifiability, reusability, testability) 3;Source variable (of the selected source project): v_99 (Performance efficiency (e.g., time behaviour, resource utilisation, capacity));if selected always list element;[1] Performance efficiency (e.g., time behaviour, resource utilisation, capacity)

4;Source variable (of the selected source project): v_100 (Portability (e.g., adaptability, install ability, replaceability));if selected always list element;[1] Portability (e.g., adaptability, install ability, replaceability)

5;Source variable (of the selected source project): v_101 (Reliability (e.g., availability, fault tolerance, maturity, recoverability));if selected always list element;[1] Reliability (e.g., availability, fault tolerance, maturity, recoverability)

6;Source variable (of the selected source project): v_102 (Safety (e.g. freedom of risk for health or distaster));if selected always list element;[1] Safety (e.g. freedom of risk for health or distaster)

7;Source variable (of the selected source project): v_303 (Security (e.g., accountability, authenticity, confidentiality, integrity, non-repudiation));if selected always list element;[1] Security (e.g., accountability, authenticity, confidentiality, integrity, non-repudiation) 8;Source variable (of the selected source project): v_103 (Usability (e.g., accessibility, appropriateness recognizability, learnability, operability, user error protection, user interface aesthetics));if selected always list element;[1] Usability (e.g., accessibility, appropriateness recognizability, learnability, operability, user error protection, user interface aesthetics)

9;Source variable (of the selected source project): v_104 (Other (please specify));if selected always list element;[1] #v_105#

List: [2] "ProblemSelectionStatic", dynamic

List element no.; Meta information; Assign to list, if; Wildcards

- 1;Source variable (of the selected source project): v_174 (Communication flaws within the project team);if selected always list element;[1] Communication flaws within the project team
- 2;Source variable (of the selected source project): v_175 (Communication flaws between the project and the customer);if selected always list element;[1] Communication flaws between the project and the customer
- 3;Source variable (of the selected source project): v_176 (Terminological problems);if selected always list element;[1] Terminological problems
- 4;Source variable (of the selected source project): v_177 (Incomplete or hidden requirements);if selected always list element;[1] Incomplete or hidden requirements 5;Source variable (of the selected source project): v_178 (Insufficient support by project lead);if selected always list element;[1] Insufficient support by project lead 6;Source variable (of the selected source project): v_179 (Insufficient support by customer);if selected always list element;[1] Insufficient support by customer 7;Source variable (of the selected source project): v_180 (Stakeholders with difficulties in separating requirements from previously known solution designs);if selected always list element;[1] Stakeholders with difficulties in separating requirements from previously known solution designs
- 8;Source variable (of the selected source project): v_181 (Inconsistent requirements);if selected always list element;[1] Inconsistent requirements
- 9;Source variable (of the selected source project): v_182 (Missing traceability);if selected always list element;[1] Missing traceability
- 10;Source variable (of the selected source project): v_183 (Moving targets (changing goals, business processes and / or requirements));if selected always list element;[1] Moving targets (changing goals, business processes and / or requirements)
- 11;Source variable (of the selected source project): v_184 (Gold plating (implementation of features without corresponding requirements));if selected always list element;[1] Gold plating (implementation of features without corresponding requirements)
- 12;Source variable (of the selected source project): v_185 (Weak access to customer needs and / or (internal) business information);if selected always list element;[1] Weak access to customer needs and / or (internal) business information
- 13;Source variable (of the selected source project): v_186 (Weak knowledge about customer's application domain);if selected always list element;[1] Weak knowledge about customer's application domain
- 14;Source variable (of the selected source project): v_187 (Weak relationship between customer and project lead);if selected always list element;[1] Weak relationship between customer and project lead
- 15;Source variable (of the selected source project): v_188 (Time boxing / Not enough time in general);if selected always list element;[1] Time boxing / Not enough time in general 16;Source variable (of the selected source project): v_189 (Discrepancy between high degree of innovation and need for formal acceptance of (potentially wrong / incomplete / unknown) requirements);if selected always list element;[1] Discrepancy between high degree of innovation and need for formal acceptance of (potentially wrong / incomplete / unknown) requirements
- 17;Source variable (of the selected source project): v_190 (Technically unfeasible requirements);if selected always list element;[1] Technically unfeasible requirements

18;Source variable (of the selected source project): v_191 (Underspecified requirements that are too abstract and allow for various interpretations);if selected always list element;[1] Underspecified requirements that are too abstract and allow for various interpretations 19;Source variable (of the selected source project): v_192 (Unclear / unmeasurable non-functional requirements);if selected always list element;[1] Unclear / unmeasurable non-functional requirements

20; Source variable (of the selected source project): v_193 (Volatile customer's business domain regarding, e.g., changing points of contact, business processes or requirements); if selected always list element; [1] Volatile customer's business domain regarding, e.g., changing points of contact, business processes or requirements

21;Source variable (of the selected source project): v_246 (Top 1 problem (most critical one)); (1=1);[1] Top 1 problem (most critical one)

22;Source variable (of the selected source project): v_248 (Top 2 problem); (1=1);[1] Top 2 problem

23; Source variable (of the selected source project): v_250 (Top 3 problem); (1=1);[1] Top 3 problem

24; Source variable (of the selected source project): v_252 (Top 4 problem); (1=1);[1] Top 4 problem

25;Source variable (of the selected source project): v_254 (Top 5 problem); (1=1);[1] Top 5 problem

1 Page: System (PGID 2401445)

3 Page: Language Selection (PGID 2420013)

Please select the language (q_4423504 - Type 111)

v_300 v_300 int Language Selection

1 English

2 Español

3 Português

4 Page: Instructions (PGID 2401449)

5 Page: Metadata (PGID 2401450)

In which country are you personally located? (q_4381600 - Type 131)

v_23 v_23 int Country Selection

6 Afghanistan

7 Albania

8 Algeria

9 American Samoa

10 Andorra

11 Angola

- 12 Anguilla
- 13 Antigua & Barbuda
- 14 Argentina
- 15 Armenia
- 16 Aruba
- 17 Australia
- 18 Austria
- 19 Azerbaijan
- 20 Bahamas, The
- 21 Bahrain
- 22 Bangladesh
- 23 Barbados
- 24 Belarus
- 25 Belgium
- 26 Belize
- 27 Benin
- 28 Bermuda
- 29 Bhutan
- 30 Bolivia
- 31 Bosnia & Herzegovina
- 32 Botswana
- 33 Brazil
- 34 British Virgin Is.
- 35 Brunei
- 36 Bulgaria
- 37 Burkina Faso
- 38 Burma
- 39 Burundi
- 40 Cambodia
- 41 Cameroon
- 42 Canada
- 43 Cape Verde
- 44 Cayman Islands
- 45 Central African Rep.
- 46 Chad
- 47 Chile
- 48 China
- 49 Colombia
- 50 Comoros
- 51 Congo, Dem. Rep.
- 52 Congo, Repub. of the
- 53 Cook Islands
- 54 Costa Rica
- 55 Cote d'Ivoire
- 56 Croatia
- 57 Cuba
- 58 Cyprus
- 59 Czech Republic

- 60 Denmark
- 61 Djibouti
- 62 Dominica
- 63 Dominican Republic
- 64 East Timor
- 65 Ecuador
- 66 Egypt
- 67 El Salvador
- 68 Equatorial Guinea
- 69 Eritrea
- 70 Estonia
- 71 Ethiopia
- 72 Faroe Islands
- 73 Fiji
- 74 Finland
- 75 France
- 76 French Guiana
- 77 French Polynesia
- 78 Gabon
- 79 Gambia, The
- 80 Gaza Strip
- 81 Georgia
- 82 Germany
- 83 Ghana
- 84 Gibraltar
- 85 Greece
- 86 Greenland
- 87 Grenada
- 88 Guadeloupe
- 89 Guam
- 90 Guatemala
- 91 Guernsey
- 92 Guinea
- 93 Guinea-Bissau
- 94 Guyana
- 95 Haiti
- 96 Honduras
- 97 Hong Kong
- 98 Hungary
- 99 Iceland
- 400 1 11
- 100 India
- 101 Indonesia
- 102 Iran
- 103 Iraq
- 104 Ireland
- 105 Isle of Man
- 106 Israel
- 107 Italy

- 108 Jamaica
- 109 Japan
- 110 Jersey
- 111 Jordan
- 112 Kazakhstan
- 113 Kenya
- 114 Kiribati
- 115 Korea, North
- 116 Korea, South
- 117 Kuwait
- 118 Kyrgyzstan
- 119 Laos
- 120 Latvia
- 121 Lebanon
- 122 Lesotho
- 123 Liberia
- 124 Libya
- 125 Liechtenstein
- 126 Lithuania
- 127 Luxembourg
- 128 Macau
- 129 Macedonia
- 130 Madagascar
- 131 Malawi
- 132 Malaysia
- 133 Maldives
- 134 Mali
- 135 Malta
- 136 Marshall Islands
- 137 Martinique
- 138 Mauritania
- 139 Mauritius
- 140 Mayotte
- 141 Mexico
- 142 Micronesia, Fed. St.
- 143 Moldova
- 144 Monaco
- 145 Mongolia
- 146 Montserrat
- 147 Morocco
- 148 Mozambique
- 149 Namibia
- 150 Nauru
- 151 Nepal
- 152 Netherlands
- 153 Netherlands Antilles
- 154 New Caledonia
- 155 New Zealand

- 156 Nicaragua
- 157 Niger
- 158 Nigeria
- 159 N. Mariana Islands
- 160 Norway
- 161 Oman
- 162 Pakistan
- 163 Palau
- 164 Panama
- 165 Papua New Guinea
- 166 Paraguay
- 167 Peru
- 168 Philippines
- 169 Poland
- 170 Portugal
- 171 Puerto Rico
- 172 Qatar
- 173 Reunion
- 174 Romania
- 175 Russia
- 176 Rwanda
- 177 Saint Helena
- 178 Saint Kitts & Nevis
- 179 Saint Lucia
- 180 St Pierre & Miquelon
- 181 Saint Vincent and the Grenadines
- 182 Samoa
- 183 San Marino
- 184 Sao Tome & Principe
- 185 Saudi Arabia
- 186 Senegal
- 187 Serbia
- 188 Seychelles
- 189 Sierra Leone
- 190 Singapore
- 191 Slovakia
- 192 Slovenia
- 193 Solomon Islands
- 194 Somalia
- 195 South Africa
- 196 Spain
- 197 Sri Lanka
- 198 Sudan
- 199 Suriname
- 200 Swaziland
- 201 Sweden
- 202 Switzerland
- 203 Syria

- 204 Taiwan
- 205 Tajikistan
- 206 Tanzania
- 207 Thailand
- 208 Togo
- 209 Tonga
- 210 Trinidad & Tobago
- 211 Tunisia
- 212 Turkey
- 213 Turkmenistan
- 214 Turks & Caicos Is
- 215 Tuvalu
- 216 Uganda
- 217 Ukraine
- 218 United Arab Emirates
- 219 United Kingdom
- 220 United States
- 221 Uruguay
- 222 Uzbekistan
- 223 Vanuatu
- 224 Venezuela
- 225 Vietnam
- 226 Virgin Islands
- 227 Wallis and Futuna
- 228 West Bank
- 229 Western Sahara
- 230 Yemen
- 231 Zambia
- 232 Zimbabwe
- 233 Please select a country -

How many people are involved in your project? (q_4381425 - Type 141)

v_3 v_3 varchar Team Size

Please select the main industrial sector of your project and the application domain of the software you build. $(q_4381417 - Type 111)$

- v_1 v_1 int Sector
 - 1 Agriculture
 - 2 Automotive
 - 3 Finance
 - 4 Healthcare
 - 5 Security
 - 6 Manufacturing
 - 7 Energy
 - 8 Logistics
 - 9 Railway

```
10
                    Avionics
             12
                    Insurance
             13
                    Education
             14
                    Public sector
             15
                    Enterprise resource planning
             16
                    Human resources
             17
                    e-Government
             18
                    Telecommunication
             19
                    Games engineering
             20
                    Public transportation
             21
                    e-Commerce
             22
                    Other (please specify)
v_2
                           Other (please specify)
      v_2
             varchar
```

Please select the class of systems or services you work on in the context of your project. (q 4381429 - Type 111)

- v_4 v_4 int System Class
 - 1 Software-intensive embedded systems
 - 2 Business information systems
 - 3 Hybrid of both software-intensive embedded systems and business

information systems

6 Other (please specify)

v_5 v_5 varchar Other (please specify)

Are there quality attributes which are of particularly high importance for your development project? If yes, which one(s)? (q_4381437 - Type 121)

 v_6 v_6 int Compatibility (e.g., co-existence, interoperability)

0 not quoted

1 quoted

v_7 v_7 int Maintainability (e.g., analysability, modularity, modifiability, reusability, testability)

0 not quoted

1 quoted

v_8 v_8 int Performance efficiency (e.g., time behaviour, resource utilisation, capacity)

0 not quoted

1 quoted

v_9 v_9 int Portability (e.g., adaptability, installability, replaceability)

0 not quoted

1 quoted

v_10 v_10 int Reliability (e.g., availability, faulty tolerance, maturity, recoverability)

0 not quoted

1 quoted

v_11 v_11 int Security (e.g., accountability, authenticity, confidentiality, integrity,

non-repudiation)

0 not quoted

```
1
                    quoted
v 12 v 12 int
                    Safety (e.g., freedom of risk for health or disaster)
                    not quoted
             0
             1
                    quoted
v 13 v 13 int
                    Usability (e.g., accessibility, appropriateness recognisability,
learnability, operability, user error protection, user interface aesthetics)
             0
                    not quoted
             1
                    quoted
                    Other
v_14 v_14 int
             0
                    not quoted
             1
                    quoted
v_15 v_15 varchar
                           Other
Is your project distributed? (q_4381446 - Type 111)
v_16 v_16 int
                    Team Distribution
             1
                    Yes
             2
                    No
                    I don't know
             3
What is the main role you occupy in your project? (q_4381479 - Type 111)
v_17 v_17
             int
                    Main Role Respondent
             1
                    Business Analyst
             2
                    Customer
             3
                    Developer
                    Project Lead / Project Manager
             4
             5
                    Product Owner
             6
                    Product Manager
             7
                    Scrum Master
             8
                    Architect
             9
                    Test Manager / Tester
             10
                    Marketing
             11
                    Requirements Engineer
             12
                    Other (please specify)
Other (please specify)
How many years of industrial experience do you have in your role? (q_4381538 - Type 141)
v_19 v_19 varchar
                           Experience Respondent
Do you have a certification in this role? If yes, which one? (q_4381564 - Type 141)
v 20 v 20 varchar
                           Certification Role Respondent
```

Which organisational role does your project team have in your project? (q_4381566 - Type 111)

v_21 v_21 int Organisational Role Team
 1 Customer
 2 Main contractor (main responsible for the development project)
 3 Sub-contractor (responsible for part of a larger development project)
 4 In-house development
 6 Other (please specify)

How would you personally characterise your way of working in your project? (q_4382041 - Type 111)

Other (please specify)

- v_24 v_24 int Characterisation Way of Working
 - 1 Agile

v_22 v_22 varchar

- 2 Rather agile
- 3 Hybrid
- 4 Rather plan-driven
- 5 Plan-driven

In general, how would you rate the relationship between your project team and your customer? (q_4382042 - Type 111)

- v_25 v_25 int Characterisation Relationship Customer
 - 1 Very good
 - 2 Good
 - 3 neutral
 - 4 Bad
 - 5 Very bad
- 6 Page: Filter Customer Relationship (PGID 2403398)

Filter

not v_25 Characterisation Relationship Customer In general, how would you rate the relationship between your project team and your customer? - Characterisation Relationship Customer greater1 or not v_25 Characterisation Relationship Customer In general, how would you rate the relationship between your project team and your customer? - Characterisation Relationship Customer less 5

6.1 Page: Relationship Customer (PGID 2401918)

Question will not be seen if:

v_25 Characterisation Relationship Customer In general, how would you rate the relationship between your project team and your customer? - Characterisation Relationship Customer less 5

In your opinion, what is the reason for the particularly bad relationship? (q_4382069 - Type 142)

v_26 v_26 blob Reason Bad Relationship

Question will not be seen if:

v_25 Characterisation Relationship Customer In general, how would you rate the relationship between your project team and your customer? - Characterisation Relationship Customer greater1

In your opinion, what is the reason for the particularly good relationship? (q_4382070 - Type 142)

v_27 v_27 blob Reason Good Relationship

7 Page: Requirements Elicitation (PGID 2401451)

How are the requirements elicited in your project? (q_4382093 - Type 121)

v_28 v_28 int We elicit and / or refine requirements in several iterations

0 not quoted

1 quoted

v_29 v_29 int We elicit and / or refine requirements in a specifically dedicated

project phase

0 not quoted

1 quoted

v_34 v_34 int Other (please specify)

0 not quoted

1 quoted

v_35 v_35 varchar Other (please specify)

Which techniques do you use for your requirements elicitations? (q. 4382121 - Type 121)

		•	
v_36	v_36	int	Interviews
		0	not quoted
		1	quoted
v_37	v_37	int	Analysis of existing documents
		0	not quoted
		1	quoted
v_38	v_38	int	Risk analyses
		0	not quoted
		1	quoted
v_39	v_39	int	Prototyping
		0	not quoted
		1	quoted
v_40	v_40	int	Workshops and focus groups

```
0
                    not quoted
             1
                    quoted
v_41 v_41
             int
                    (Requirements) Reuse databases and guidelines
             0
                    not quoted
                    quoted
             1
v_42 v_42
                    Design Thinking / Lean Startup
             int
             0
                    not quoted
             1
                    quoted
     v_43
                    External experts
v 43
             int
             0
                    not quoted
             1
                    quoted
      v 44
             int
                    Observations
v 44
             0
                    not quoted
             1
                    quoted
      v_47
                    We do not elicit requirements (ourselves)
v 47
             int
                    not quoted
             0
             1
                    quoted
                    Other
v 45
      v 45
             int
             0
                    not quoted
             1
                    quoted
v_46 v_46 varchar
                           Other
```

Who has the primary responsibility for eliciting requirements? (q_4382226 - Type 111)

Primary Responsibility Requirements Elicitation v_51 v_51 int 1 Marketing 2 **Business Analyst** 3 Requirements Engineer 4 Project Lead / Project Manager 5 Scrum Master 6 **Product Owner** 7 **Product Manager** 8 Architect 9 Developer 10 Customer 12 Other 13 Nobody has the primary responsibility Other v_52 v_52 varchar

8 Page: Documentation Entry (PGID 2403254)

At what level of granularity do you document requirements, and when? (q_4384356 - Type 111)

v 59 v 59 int Documentation Granularity

1 We document detailed requirements at the beginning of the project.

- We document high-level requirements at beginning of the project and refine them to detailed requirements when needed (for instance, we document epics and refine them to user stories for the sprints).
 - We do not document requirements.
 - 4 Other (please specify)

v_60 v_60 varchar Other (please specify)

9 Page: Filter Documentation (PGID 2403672)

Filter

v_59 Documentation Granularity At what level of granularity do you document requirements, and when? - Documentation Granularity unequal 3

9.1 Page: Requirements Documentation (PGID 2401452)

How do you make use of the documented requirements? (q_4384361 - Type 121)

v_61 v_61 int They are the basis for the implementation.

0 not quoted

1 quoted

v 62 v 62 int They are source for tests.

0 not quoted

1 quoted

v 63 v 63 int They are used in customer acceptance.

0 not quoted

1 quoted

v_64 v_64 int They are part of the contract.

0 not quoted

1 quoted

v_65 v_65 int They are a reminder for further discussions with the customer,

product owner, and / or other team members

0 not quoted

1 quoted

v_66 v_66 int Other (please specify)

0 not quoted

1 quoted

v_67 v_67 varchar Other (please specify)

For which information do you make an explicit distinction when documenting your requirements? (q_4384445 - Type 121)

v_76 v_76 int Architectural constraints

0 not quoted

1 quoted

v_73 v_73 int Development process aspects

0 not quoted

```
1
                    quoted
v_79 v_79
             int
                    Formal properties
             0
                    not quoted
             1
                    quoted
                    Functional properties of the system
v_68 v_68
             int
             0
                    not quoted
                    quoted
             1
                    Goals
v_70 v_70
             int
             0
                    not quoted
                    quoted
             1
v_71 v_71
             int
                    Quality properties
             0
                    not quoted
             1
                    quoted
                    Rules (e.g., business rules)
v_74 v_74
             int
             0
                    not quoted
             1
                    quoted
                    Stakeholders
v_78 v_78
             int
             0
                    not quoted
             1
                    quoted
                    System behaviour
v_77 v_77
             int
             0
                    not quoted
             1
                    quoted
v_75 v_75
             int
                    Technical interfaces
             0
                    not quoted
                    quoted
             1
                    Usage scenarios
v 69
      v 69
             int
             0
                    not quoted
                    quoted
             1
v_72 v_72
             int
                    User interface(s)
             0
                    not quoted
                    quoted
             1
v_80 v_80
                    Other (please specify)
             int
             0
                    not quoted
             1
                    quoted
                           Other (please specify)
v_81 v_81 varchar
```

How do you document requirements? (q_4384461 - Type 121)

v_87	v_87	int	Activity diagrams
		0	not quoted
		1	quoted
v_92	v_92	int	Business process models
		0	not quoted
		1	quoted
v_88	v_88	int	Class diagrams
		0	not quoted
		1	quoted
v_91	v_91	int	Goal models

```
0
                     not quoted
              1
                     quoted
v_83 v_83
             int
                     Natural language / informal (plain) text
              0
                     not quoted
                     quoted
              1
v_93 v_93
                     Prototypes / User screens
             int
              0
                     not quoted
              1
                     quoted
      v_89
v_89
                     Sequence diagrams
              int
              0
                     not quoted
              1
                     quoted
v 94
      v_94
                     Sketches
              int
              0
                     not quoted
              1
                     quoted
      v_90
v 90
                     State machines
             int
              0
                     not quoted
              1
                     quoted
                     Structured lists of requirements
      v_84
v 84
             int
              0
                     not quoted
                     quoted
              1
                     Use case diagrams
      v_86
             int
v_86
              0
                     not quoted
              1
                     quoted
v_82
      v_82
             int
                     Use cases
              0
                     not quoted
              1
                     quoted
      v_85
                     User stories
v 85
             int
              0
                     not quoted
                     quoted
              1
                     Other (please specify)
v_95
      v_95
             int
              0
                     not quoted
              1
                     quoted
v_96 v_96 varchar
                            Other (please specify)
```

Which classes of non-functional requirements do you explicitly consider in your requirements documentation? (q_4384473 - Type 121)

1

quoted

```
v 97 v 97
                      Compatibility (e.g., co-existence, interoperability)
              int
              0
                      not quoted
              1
                      quoted
v_98 v_98
             int
                      Maintainability (e.g., analysability, modularity, modifiability,
reusability, testability)
              0
                      not quoted
              1
                      quoted
v_99 v_99
                      Performance efficiency (e.g., time behaviour, resource utilisation,
              int
capacity)
              0
                      not quoted
```

```
v_100 v_100 int
                      Portability (e.g., adaptability, install ability, replaceability)
              0
                      not quoted
              1
                      quoted
v_101 v_101 int
                      Reliability (e.g., availability, fault tolerance, maturity, recoverability)
                      not quoted
              1
                      quoted
v_102 v_102 int
                      Safety (e.g. freedom of risk for health or distaster)
                      not quoted
              0
                      quoted
v_303 v_303 int
                      Security (e.g., accountability, authenticity, confidentiality, integrity,
non-repudiation)
                      not quoted
              1
                      quoted
v 103 v 103 int
                      Usability (e.g., accessibility, appropriateness recognizability,
learnability, operability, user error protection, user interface aesthetics)
              0
                      not quoted
              1
                      quoted
v_104 v_104 int
                      Other (please specify)
                      not quoted
                      quoted
v_105 v_105 varchar
                             Other (please specify)
```

10 Page: Filter NFR (PGID 2403647)

Filter v_97 Compatibility (e.g., co-existence, interoperability) Which classes of nonfunctional requirements do you explicitly consider in your requirements documentation? -Compatibility (e.g., co-existence, interoperability) equal 1 v_98 Maintainability (e.g., analysability, modularity, modifiability, reusability, or testability) Which classes of non-functional requirements do you explicitly consider in your requirements documentation? - Maintainability (e.g., analysability, modularity, modifiability, reusability, testability) equal 1 v 99 Performance efficiency (e.g., time behaviour, resource utilisation, capacity) Which classes of non-functional requirements do you explicitly consider in your requirements documentation? - Performance efficiency (e.g., time behaviour, resource utilisation, capacity) equal 1 v_100 Portability (e.g., adaptability, install ability, replaceability) Which classes of or non-functional requirements do you explicitly consider in your requirements documentation? - Portability (e.g., adaptability, install ability, replaceability) equal 1 v_101 Reliability (e.g., availability, fault tolerance, maturity, recoverability) or Which classes of non-functional requirements do you explicitly consider in your requirements documentation? - Reliability (e.g., availability, fault tolerance, maturity, recoverability) equal 1 v 102 Safety (e.g. freedom of risk for health or distaster) Which classes of non-

functional requirements do you explicitly consider in your requirements documentation? -

Safety (e.g. freedom of risk for health or distaster) equal 1

- or v_103 Usability (e.g., accessibility, appropriateness recognizability, learnability, operability, user error protection, user interface aesthetics) Which classes of nonfunctional requirements do you explicitly consider in your requirements documentation? Usability (e.g., accessibility, appropriateness recognizability, learnability, operability, user error protection, user interface aesthetics) equal 1 or v_104 Other (please specify) Which classes of non-functional requirements do you explicitly consider in your requirements documentation? Other (please specify) equal 1 or v_303 Security (e.g., accountability, authenticity, confidentiality, integrity, non-
- repudiation) Which classes of non-functional requirements do you explicitly consider in your requirements documentation? Security (e.g., accountability, authenticity, confidentiality, integrity, non-repudiation) equal 1

10.1 Page: Documentation NFR (PGID 2403284)

How do you document each type of non-functional requirements selected in the previous question? (q_4384526 - Type 143)

- v_343 varchar List element: Compatibility (e.g., co-existence, interoperability) (Source variable (of the selected source project): v_97 (Compatibility (e.g., co-existence, interoperability)))
- v_344 v_344 varchar List element: Maintainability (e.g., analysability, modularity, modifiability, reusability, testability) (Source variable (of the selected source project): v_98 (Maintainability (e.g., analysability, modularity, modifiability, reusability, testability)))
- v_345 varchar List element: Performance efficiency (e.g., time behaviour, resource utilisation, capacity) (Source variable (of the selected source project): v_99 (Performance efficiency (e.g., time behaviour, resource utilisation, capacity)))
- v_346 v_346 varchar List element: Portability (e.g., adaptability, install ability, replaceability) (Source variable (of the selected source project): v_100 (Portability (e.g., adaptability, install ability, replaceability)))
- v_347 varchar List element: Reliability (e.g., availability, fault tolerance, maturity, recoverability) (Source variable (of the selected source project): v_101 (Reliability (e.g., availability, fault tolerance, maturity, recoverability)))
- v_348 varchar List element: Safety (e.g. freedom of risk for health or distaster) (Source variable (of the selected source project): v_102 (Safety (e.g. freedom of risk for health or distaster)))
- v_349 varchar List element: Security (e.g., accountability, authenticity, confidentiality, integrity, non-repudiation) (Source variable (of the selected source project): v_303 (Security (e.g., accountability, authenticity, confidentiality, integrity, non-repudiation)))
- v_350 v_350 varchar List element: Usability (e.g., accessibility, appropriateness recognizability, learnability, operability, user error protection, user interface aesthetics) (Source variable (of the selected source project): v_103 (Usability (e.g., accessibility, appropriateness recognizability, learnability, operability, user error protection, user interface aesthetics)))
- v_351 v_351 varchar List element: #v_105# (Source variable (of the selected source project): v_104 (Other (please specify)))

11 Page: Requirements Validation (PGID 2401453)

```
How do you verify and / or validate your requirements? (q_4384499 - Type 121)
                    Automatic checking
v 110 v 110 int
             0
                    not quoted
             1
                    quoted
v 108 v 108 int
                    Informal peer reviews
                    not quoted
             1
                    quoted
v_106 v_106 int
                    Inspections (formal technical reviews using reading techniques or
checklists)
             0
                    not quoted
             1
                    quoted
v_109 v_109 int
                    Simulations
             0
                    not quoted
             1
                    quoted
v_107 v_107 int
                    Walkthroughs
                    not quoted
             1
                    quoted
v_111 v_111 int
                    We do not verify and / or validate our requirements
                    not quoted
                    quoted
v_112 v_112 int
                    Other (please specify)
             0
                    not quoted
             1
                    quoted
v_113 v_113 varchar
                           Other (please specify)
How do you align software testing with requirements? (q_4386276 - Type 121)
v 158 v 158 int
                    Testers participate in requirements reviews.
             0
                    not quoted
             1
                    quoted
v_159 v_159 int
                    We check the coverage of requirements with tests.
             0
                    not quoted
             1
                    quoted
v_160 v_160 int
                    We define acceptance criteria and tests for requirements.
             0
                    not quoted
             1
                    quoted
v_161 v_161 int
                    We derive tests from system models.
             0
                    not quoted
                    quoted
             1
v_162 v_162 int
                    We do not align tests and requirements.
                    not quoted
             0
                    quoted
                    Other (please specify)
v 163 v 163 int
                    not quoted
             0
             1
                    quoted
```

v_164 v_164 varchar Other (please specify)

12 Page: Requirements Management (PGID 2401454)

How do you deal with changing requirements after the initial release of the system (or parts of it)? (q. 4386278 - Type 111)

v_165 v_165 int Requirements Changes

- 1 We work with change requests, but do not further update our requirements specification once formally accepted.
 - We update our product backlog.
- 3 We work with change requests and continuously update our requirements specification accordingly also after formally accepted.
 - 4 Other (please specify)
 - 5 We don't update our requirements (documentation) at all.

v 166 v 166 varchar Other (please specify)

13 Page: Satisfaction RE (PGID 2401455)

Right now, how satisfied are you with how requirements engineering is done in your project? (q_4386283 - Type 111)

v_167 v_167 int Satisfaction RE

- 1 Very dissatisfied
- 2 Dissatisfied
- 3 Neither dissatisfied nor satisfied
- 4 Satisfied
- 5 Very satisfied

14 Page: Filter Dissatisfaction (PGID 2404980)

Filter

v_167 Satisfaction RE Right now, how satisfied are you with how requirements engineering is done in your project? - Satisfaction RE equal 1 or v_167 Satisfaction RE Right now, how satisfied are you with how requirements engineering is done in your project? - Satisfaction RE equal 2

14.1 Page: RE Dissatisfaction (PGID 2404981)

Why are you rather dissatisfied with how requirements engineering is done in your project? $(q_4386342 - Type 142)$

v_168 v_168 blob Reasons Dissatisfaction

What are the consequences of the dissatisfying requirements engineering? (q_4386344 - Type 142)

v_170 v_170 blob Consequences Dissatisfying RE

What should change in your requirements engineering in order to make it satisfying? $(q_4386345 - Type 142)$

v_171 v_171 blob Necessary Change in RE

15 Page: Filter Satisfaction (PGID 2404982)

Filter

v_167 Satisfaction RE Right now, how satisfied are you with how requirements engineering is done in your project? - Satisfaction RE equal 4 or v_167 Satisfaction RE Right now, how satisfied are you with how requirements engineering is done in your project? - Satisfaction RE equal 5

15.1 Page: RE Satisfaction (PGID 2404996)

Why are you rather satisfied with how requirements engineering is done in your project? $(q_4386343 - Type 142)$

v 169 v 169 blob Reasons Satisfaction

What are the consequenes of the satisfying requirements engineering? (q_4386346 - Type 142)

v_172 v_172 blob Consequences Satisfying RE

At some point in the past, you were likely not fully satisfied with your project's requirements engineering. If anything, what happened to make you satisfied? $(q_4386347 - Type 142)$ v_173 v_173 blob Past Changes in RE

16 Page: RE Problems (PGID 2405011)

Considering your personal experiences, how do the following problems in requirements engineering apply to your project? (q_4386791 - Type 341)

v_174 v_174 int Communication flaws within the project team

- 1 Does not apply at all
- 2 Does rather not apply
- 3 Neutral
- 4 Rather applies

```
5
                     Strongly applies
v 175 v 175 int
                     Communication flaws between the project and the customer
                     Does not apply at all
              1
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
              5
                     Strongly applies
v 176 v 176 int
                     Terminological problems
                     Does not apply at all
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
              5
                     Strongly applies
v_177 v_177 int
                     Incomplete or hidden requirements
                     Does not apply at all
              1
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
                     Strongly applies
v_178 v_178 int
                     Insufficient support by project lead
                     Does not apply at all
              1
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
              5
                     Strongly applies
v 179 v 179 int
                     Insufficient support by customer
              1
                     Does not apply at all
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
              5
                     Strongly applies
v 180 v 180 int
                     Stakeholders with difficulties in separating requirements from
previously known solution designs
              1
                     Does not apply at all
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
              5
                     Strongly applies
v_181 v_181 int
                     Inconsistent requirements
              1
                     Does not apply at all
              2
                     Does rather not apply
              3
                     Neutral
              4
                     Rather applies
              5
                     Strongly applies
v_182 v_182 int
                     Missing traceability
              1
                     Does not apply at all
                     Does rather not apply
              2
              3
                     Neutral
```

	4	Rather applies
	5	Strongly applies
v_183 v_183		Moving targets (changing goals, business processes and / or
requirements)		
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_184 v_184		Gold plating (implementation of features without corresponding
requirements		
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_185 v_185	int	Weak access to customer needs and / or (internal) business
information		
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_186 v_186	int	Weak knowledge about customer's application domain
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_187 v_187	int	Weak relationship between customer and project lead
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_188 v_188	int	Time boxing / Not enough time in general
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_189 v_189	int	Discrepancy between high degree of innovation and need for formal
acceptance of	(poten	tially wrong / incomplete / unknown) requirements
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies

v_190 v_190	int	Technically unfeasible requirements
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_191 v_191	int	Underspecified requirements that are too abstract and allow for
various interp	retation	ns
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_192 v_192	int	Unclear / unmeasurable non-functional requirements
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies
	5	Strongly applies
v_193 v_193	int	Volatile customer's business domain regarding, e.g., changing points
of contact, bu	siness p	processes or requirements
	1	Does not apply at all
	2	Does rather not apply
	3	Neutral
	4	Rather applies

17 Page: Critical RE Problems (PGID 2405407)

5

Considering your personally experienced problems stated in the previous question, which ones would you classify as the five most critical ones? $(q_4388468 - Type 361)$

v_246 v_246 int	Top 1 problem (most critical one) (Problem experienced in your
project:) 215651	
0	Please make a selection

- 1 Communication flaws within the project team
- 2 Communication flaws between the project and the customer
- 3 Terminological problems

Strongly applies

- 4 Incomplete or hidden requirements
- 5 Insufficient support by project lead
- 6 Insufficient support by customer
- 7 Stakeholders with difficulties in separating requirements from previously known solution designs
 - 8 Inconsistent requirements
 - 9 Missing traceability
 - 10 Moving targets (changing goals, business processes and / or

requirements)

	11	Gold plating (implementation of features without corresponding
requirements))	
	12	Weak access to customer needs and / or (internal) business
information		
	13	Weak knowledge about customer's application domain
	14	Weak relationship between customer and project lead
	15	Time boxing / Not enough time in general
	16	Discrepancy between high degree of innovation and need for formal
acceptance of	••	tially wrong / incomplete / unknown) requirements
	17	Technically unfeasible requirements
	18	Underspecified requirements that are too abstract and allow for
various interp		
	19	Unclear / unmeasurable non-functional requirements
	20	Volatile customer's business domain regarding, e.g., changing points
	-	processes or requirements
v_248 v_248		Top 2 problem (Problem experienced in your project:) 215651
	0	Please make a selection
	1 2	Communication flaws within the project team
	3	Communication flaws between the project and the customer Terminological problems
	4	Incomplete or hidden requirements
	5	Insufficient support by project lead
	6	Insufficient support by project lead
	7	Stakeholders with difficulties in separating requirements from
previously kno	-	
previously kine	8	Inconsistent requirements
	9	Missing traceability
	10	Moving targets (changing goals, business processes and / or
requirements))	
	11	Gold plating (implementation of features without corresponding
requirements))	
	12	Weak access to customer needs and / or (internal) business
information		
	13	Weak knowledge about customer's application domain
	14	Weak relationship between customer and project lead
	15	Time boxing / Not enough time in general
	16	Discrepancy between high degree of innovation and need for formal
acceptance of	(poten	tially wrong / incomplete / unknown) requirements
	17	Technically unfeasible requirements
	18	Underspecified requirements that are too abstract and allow for
various interp		
	19	Unclear / unmeasurable non-functional requirements
	20	Volatile customer's business domain regarding, e.g., changing points
	•	processes or requirements
v_250 v_250		Top 3 problem (Problem experienced in your project:) 215651
	0	Please make a selection
	1	Communication flaws within the project team
	2	Communication flaws between the project and the customer

	3	Terminological problems
	4	Incomplete or hidden requirements
	5	Insufficient support by project lead
	6	Insufficient support by customer
	7	Stakeholders with difficulties in separating requirements from
previously kno	wn solu	
	8	Inconsistent requirements
	9	Missing traceability
	10	Moving targets (changing goals, business processes and / or
requirements)		
	11	Gold plating (implementation of features without corresponding
requirements)		
	12	Weak access to customer needs and / or (internal) business
information		
	13	Weak knowledge about customer's application domain
	14	Weak relationship between customer and project lead
	15	Time boxing / Not enough time in general
	16	Discrepancy between high degree of innovation and need for formal
acceptance of	(potent	tially wrong / incomplete / unknown) requirements
	17	Technically unfeasible requirements
	18	Underspecified requirements that are too abstract and allow for
various interp	retation	ns
	19	Unclear / unmeasurable non-functional requirements
	20	Volatile customer's business domain regarding, e.g., changing points
of contact, bus	siness p	rocesses or requirements
v_252 v_252	int	Top 4 problem (Problem experienced in your project:) 215651
	0	Please make a selection
	1	Communication flaws within the project team
	2	Communication flaws between the project and the customer
	3	Terminological problems
	4	Incomplete or hidden requirements
	5	Insufficient support by project lead
	6	Insufficient support by customer
	7	Stakeholders with difficulties in separating requirements from
previously kno	wn sol	ution designs
	8	Inconsistent requirements
	9	Missing traceability
	10	Moving targets (changing goals, business processes and / or
requirements)		
	11	Gold plating (implementation of features without corresponding
requirements)		
	12	Weak access to customer needs and / or (internal) business
information		
	13	Weak knowledge about customer's application domain
	14	Weak relationship between customer and project lead
	15	Time boxing / Not enough time in general
	16	Discrepancy between high degree of innovation and need for formal tially wrong / incomplete / unknown) requirements

- 17 Technically unfeasible requirements
- 18 Underspecified requirements that are too abstract and allow for various interpretations
 - 19 Unclear / unmeasurable non-functional requirements
- Volatile customer's business domain regarding, e.g., changing points of contact, business processes or requirements
- v_254 v_254 int Top 5 problem (Problem experienced in your project:) 215651
 - O Please make a selection
 - 1 Communication flaws within the project team
 - 2 Communication flaws between the project and the customer
 - 3 Terminological problems
 - 4 Incomplete or hidden requirements
 - 5 Insufficient support by project lead
 - 6 Insufficient support by customer
- 7 Stakeholders with difficulties in separating requirements from previously known solution designs
 - 8 Inconsistent requirements
 - 9 Missing traceability
 - 10 Moving targets (changing goals, business processes and / or

requirements)

Gold plating (implementation of features without corresponding

requirements)

Weak access to customer needs and / or (internal) business

information

- 13 Weak knowledge about customer's application domain
- 14 Weak relationship between customer and project lead
- 15 Time boxing / Not enough time in general
- Discrepancy between high degree of innovation and need for formal acceptance of (potentially wrong / incomplete / unknown) requirements
 - 17 Technically unfeasible requirements
- 18 Underspecified requirements that are too abstract and allow for various interpretations
 - 19 Unclear / unmeasurable non-functional requirements
- Volatile customer's business domain regarding, e.g., changing points of contact, business processes or requirements

18 Page: Problems Causes Effects (PGID 2406406)

Considering your personally experienced most critical problems selected in the previous question, which causes do they have? $(q_4388846 - Type 143)$

```
v_277 v_277 varchar #v_246#

^ hide if : ((v_246 = '0'))

v_278 v_278 varchar #v_248#

^ hide if : ((v_248 = '0'))

v_279 v_279 varchar #v_250#

^ hide if : ((v_250 = '0'))
```

Considering your personally experienced most critical problems selected in the previous question, which implications do they have? (q_4388903 - Type 143)

Besides the problems listed in the previous questions, is there another prominent problem you experienced in your project? If so, which one? (q_4386921 - Type 142) v 194 v 194 blob Further Problem

19 Page: Conclusion (PGID 2406658)

Is there any other unaddressed aspect that you experience in your RE process and that you would like to share with us? (q_4389544 - Type 142)

```
v_297 v_297 blob Further Remarks
```

In case you would like to be notified about the results, please fill in your email-address. (q_4389546 - Type 141)

v_298 v_298 varchar (with type check: E-mail address) Email

In principle, would you be willing to serve as an interview partner in the future for follow-up questions? $(q_4389548 - Type 111)$

v_299 v_299 int Participation Interview
1 Yes
2 No

Survey variables
Variable name Code notation
language - Language

- 1 English
- 2 ES
- 3 PT

status - Disposition code

- 11 Not yet invited
- 12 Invited
- 16 Reserved 1
- 17 Reserved 2
- 13 Inactive
- 14 E-mail could not be delivered
- 15 Cannot be reached
- 18 Custom unavailable 1
- 19 Custom unavailable 2
- 20 Not yet started
- 21 Currently responding
- 22 Suspended
- 23 Resumed
- 31 Completed
- 32 Completed after break
- 33 Custom completed 1
- 34 Custom completed 2
- 35 Rejected at login (quota full)
- 36 Rejected (quota full)
- 37 Screened out
- 38 Custom screen out 1
- 39 Custom screen out 2
- 40 Custom screen out 3
- 41 Quota full

date_of_first_access - Date of first access

date_of_last_access - Date of last access

date_of_first_mail - Date of first mail

user_agent - Browser identification

http_referer - http_referer

device_type - Desktop / mobile

0 desktop

1 mobile