Appendix A

A.1.- Roles for Design Components first, second and Third iteration.

Roles							
Design Component	**Source**	**Name**	**Specific element (restructured)**	**SDLC that is also using it**			
				DTS.1	**DTS.2**	**DTS.3**	**DTS. 4**
DC.4 ISO/IEC 29110 -Basic profile- Roles	DTS.1 ISO/IEC 29110 -Basic profile- (ISO/IEC, 2011)	{Analyst, Customer, Designer, Programmer, Project Manager, Technical Leader, Work Team}	**Customer**: Responsible for reviewing prioritisation, return on investment and providing expertise throughout the process. Confirm that the pipeline, the model and its deployment in a production environment meet the objectives.	O		/	X
			Project Manager: Manages the day-to-day activities of the Work Team on a specific data science project. Responsible for clearly articulating the business problem, at hand, connecting through domain knowledge about the business problem and translating that into day to day work. In addition, ensure training and continuous engagement with the deployed models.	O		X	X
			Work Team: Data Scientists, Business Analysts, Data Engineers, Architects, and others who execute a data science project.	O		X	
			Technical Leader: The Data Infrastructure Engineer (Data & Platform Architect) Building scalable pipelines and infrastructure that make it possible to develop and deploy models.	O		X	X
			Programmer: The Data Scientist Generating and communicating insights, understanding the strengths and weaknesses of algorithms and features.	O		X	X
			Designer: The Data Engineer to perform the data engineering parts of the project. Responsible for building and maintaining the data infrastructure. This includes extraction, transformation and loading (ETL) of data, creation of data pipelines,	O		/	
			Analyst: Data Analyst subject matter experts who have a clear understanding of the problem. They must know the internal processes and practices so that they can help the analyst understand and interpret the data. They must also be able to make the necessary changes to existing business processes to help collect the right data for the problems, if needed.	O		X	

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A.2.- Activities for Design Components first, second and third iteration.

	Activities									
Design Component	**Source**	**DC**	**Specific element**	**SDLC that is also using it**				**Iteration**		
				DTS.1	**DTS.2**	**DTS.3**	**DTS.4**	**1**	**2**	**3**
DC.5 CRISP-DM Phases	DTS.2 CRISP-DM Cross Industry Standard Process for Data Mining (Pete Chapman et al., 2000)	{Business Understanding, Data Understanding, Data Preparation, Modeling, Evaluation, Deployment}	Business Understanding		X	X	X	X	X	X
			Data Understanding		X	X	X	X	X	X
			Data Preparation		X	X	X	X	X	X
			Modeling		X	X	X	X	X	X
			Evaluation		X	X	X	X	X	X
			Deployment		X	X	X	X	X	X
DC.8 TDSP Lifecycle	DTS.3 TDSP: The Team Data Science Process (Microsoft, 2016)	{ Business understanding, Data acquisition and understanding, Modeling, Deployment, Customer acceptance }	Business understanding		X	X	X	X	X	X
			Data acquisition and understanding		X	X	X	X	X	X
			Modeling		X	X	X	X	X	X
			Deployment		X	X	X	X	X	X
			Customer acceptance			X		X	X	
DC.12 DDSL Lifecycle	DTS.4 DDSL: Domino Data Science Lifecycle (Domino Data Lab, 2017)	{ Ideation, Data Acquisition and Exploration, Research and Development, Validation, Delivery, Monitoring }	Ideation		X	X	X	X	X	X
			Data Acquisition and Exploration		X	X	X	X	X	X
			Research and Development		X	X	X	X	X	X
			Validation		X	X	X	X	X	X
			Delivery		X	X	X	X	X	X
			Monitoring				X	X	X	

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A.3.- Tasks for Design Components first, second and third iteration.

	Tasks										
Design Component	**Source**	**DC**	**Specific element**	**SDLC that is also using it (DTS)**				**Iteration**		
				1	**2**	**3**	**4**	**1**	**2**	**3**
DC.6 CRISP-DM Tasks	DTS.2 CRISP-DM: Cross Industry Standard Process for Data Mining (Pete Chapman et al., 2000)	Business Understanding [Determine Business Objectives, Assess Situation, Determine Data Mining Goals, Produce Project Plan]	Determine Business Objectives		X	X	X	X	X	X
			Assess Situation		X	X	X	X	X	X
			Determine Data Mining Goals		X	X	X	X	X	X
			Produce Project Plan		X		X	X	X	X
		Data understanding [Collect Initial Data, Describe Data, Explore Data, Verity Data Quality],	Collect Initial Data		X	X	X	X	X	X
			Describe Data		X	X	X	X	X	X
			Explore Data		X	X	X	X	X	X
			Verity Data Quality		X	X		X	X	X
		Data preparation [Select Data, Clean Data, Construct Data , Integrate Data, Format Data]	Select Data		X	X	X	X	X	X
			Clean Data		X	X	X	X	X	X
			Construct Data		X		X	X	X	X
			Integrate Data		X		X	X	X	X
			Format Data		X	X		X	X	X
		Modeling [Select Modeling Technique, Generate Test Design, Build Model, Assess Model]	Select Modeling Technique		X	X	X	X	X	X
			Generate Test Design		X	X	X	X	X	X
			Build Model		X	X	X	X	X	X
			Assess Model		X	X	X	X	X	X
		Evaluation [Evaluate Results, Review Process, Determine Next Stages]	Evaluate Results		X		X	X	X	X
			Review Process		X		X	X	X	X
			Determine Next Stages		X	X	X	X	X	X
		Deployment [Plan Deployment, Plan Monitoring and Maintenance, Produce Final Report, Review Project]	Plan Deployment		X		X	X	X	X
			Plan Monitoring and Maintenance		X	X	X	X	X	X
			Produce Final Report		X	X	X	X	X	X
			Review Project		X			X	X	
DC.9 TDSP Tasks	DTS.3 TDSP: The Team Data Science Process (Microsoft, 2016)	Business understanding [Define objectives,Identify data sources]	Define objectives,			X	X	X	X	X
			Identify data sources			X	X	X	X	X
		Data acquisition and understanding [Ingest the data, Explore the data, Set up a data pipeline]	Ingest the data		X	X	X	X	X	X
			Explore the data		X	X	X	X	X	X
			Set up a data pipeline			X		X		
		Modeling [Feature engineering, Model training, Model Evaluation]	Feature engineering		X	X	X	X	X	X
			Model training		X	X	X	X	X	X
			Model Evaluation		X	X	X	X	X	X
		Deployment [Operationalize a Model]	Operationalize a Model		X	X	X	X	X	X
			System Validation		X	X	X	X	X	X

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	Tasks										
Design Component	**Source**	**DC**	**Specific element**	**SDLC that is also using it (DTS)**				**Iteration**		
				1	**2**	**3**	**4**	**1**	**2**	**3**
		Customer acceptance [System Validation, Project hand-off]	Project hand-off		X	X	X	X	X	X
DC.13 DDSL Process	DTS.4 DDSL: Domino Data Science Lifecycle (Domino Data Lab, 2017)	Ideation [Identified Problem, Project Scoping, Review Prior Art, Calculate Value, Assess Feasibility, Manage Backlog, Select Artifacts]	Identified Problem		X	X	X	X	X	X
			Project Scoping		X		X	X		
			Review Prior Art				X	X		
			Calculate Value				X	X	X	
			Assess Feasibility		X	X	X	X		
			Manage Backlog		X		X	X	X	X
			Select Artifacts		X	X	X	X	X	X
		Data Acquisition and Exploration [Getting the Data, Identify Sources the Data, Connect, Create Data (Capture), Buy & Ingest DATA, Explore Data, Prepare Data]	Getting the Data		X	X	X	X	X	X
			Identify Sources the Data		X	X	X	X	X	X
			Connect				X	X	X	
			Create Data (Capture)				X	X	X	X
			Buy & Ingest DATA				X	X	X	X
			Explore Data		X	X	X	X	X	X
			Prepare Data		X		X	X	X	X
		Research and Development [Generate Hypothesis, Validate right tools, IT request, Experiment, Assess result, Validate the need new Data, Insightful?, Share insight]	Generate Hypothesis				X	X	X	
			Validate right tools				X	X	X	X
			IT request				X	X		
			Experiment		X	X	X	X	X	
			Assess result		X	X	X	X	X	X
			Validate the need new Data		X	X	X	X	X	X
			Insightful?				X	X		
			Share insight				X	X		
		Validation [Validate the Business, Validate Technically, Validate ready to Deploy, Publish]	Validate the Business		X		X	X	X	X
			Validate Technically				X	X	X	X
			Validate ready to Deploy		X	X	X	X	X	X
			Publish		X		X	X	X	
		Delivery [Plan Delivery, Deploy, Test]	Plan Delivery		X		X	X	X	X
			Deploy		X	X	X	X	X	X
			Test				X	X	X	X
		Monitoring [Monitor, Usage, Performance, Value, Identify Improvements, Generate Value]	Monitor		X	X	X	X	X	
			Usage				X	X		
			Performance				X	X		

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	Tasks									
Design Component	**Source**	**DC**	**Specific element**	**SDLC that is also using it (DTS)**				**Iteration**		
				1	**2**	**3**	**4**	**1**	**2**	**3**
			Value				X	X		
			Identify Improvements				X	X		
			Generate Value		X		X	X	X	

A.4.- Products for Desing Components first, second and third iteration.

	Products									
Design Component	**Source**	**DC**	**Specific element**	**SDLC that is using it (DTS)**				**Iteration**		
				1	**2**	**3**	**4**	**1**	**2**	**3**
DC.7 CRISP-DM Outputs	DTS.2 CRISP-DM: Cross Industry Standard Process for Data Mining (Pete Chapman et al., 2000)	Business Understanding [Background , Business Objectives , Business Success Criteria, Inventory of Resources , Requirements Assumptions and Constraints , Risks and Contingencies , Terminology, Costs and Benefits, Data Mining Goals , Data Mining Success Criteria, Project Plan, Initial Assessment of Tools and Techniques],	Background		X			X		
			Business Objectives		X	X	X	X	X	X
			Business Success Criteria		X			X		
			Inventory of Resources		X	X		X	X	X
			Requirements Assumptions and Constraints		X			X		
			Risks and Contingencies		X			X		
			Terminology		X			X		
			Costs and Benefits		X			X		
			Data Mining Goals		X			X	X	X
			Data Mining Success Criteria		X			X		
			Project Plan		X			X	X	X
			Initial Assessment of Tools and Techniques		X			X		
		Data Understanding [Initial Data Collection Report, Data Description Report, Data Exploration Report, Data Quality Report]	Initial Data Collection Report		X			X	X	X
			Data Description Report		X		X	X	X	X
			Data Exploration Report		X		X	X	X	X
			Data Quality Report		X	X		X	X	X
		Data Preparation [Rationale for Inclusion/ Exclusion, Data Cleaning Report, Derived Attributes , Generated Records, Merged Data, Reformatted Data, Dataset, Dataset Description]	Rationale for Inclusion/ Exclusion		X			X	X	X
			Data Cleaning Report		X			X	X	X
			Derived Attributes		X			X	X	X
			Generated Records		X			X	X	X
			Merged Data		X			X	X	X
			Reformatted Data		X	X		X	X	X
			Dataset		X		X	X	X	X
			Dataset Description		X		X	X		
		Modeling [Modeling Technique , Modeling Assumptions, Test Design, Parameter Settings , Models, Model Descriptions, Model Assessment , Revised Parameter Settings]	Modeling Technique		X			X	X	X
			Modeling Assumptions		X			X		
			Test Design		X	X		X	X	X
			Parameter Settings		X			X		
			Models		X		X	X	X	X
			Model Descriptions		X			X		
			Model Assessment		X			X	X	X
			Revised Parameter Settings		X			X	X	X
		Evaluation [Assessment of Data Mining Results w.r.t. Business Success Criteria ,	Assessment of Data Mining Results w.r.t. Business Success Criteria		X	X		X	X	X
			Approved Models		X	X		X	X	X

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	Products									
Design Component	**Source**	**DC**	**Specific element**	**SDLC that is using it (DTS)**				**Iteration**		
				1	**2**	**3**	**4**	**1**	**2**	**3**
		Approved Models, Review of Process, List of Possible Actions , Decision]	Review of Process		X	X	X	X	X	X
			List of Possible Actions		X	X		X	X	X
			Decision		X	X		X	X	X
		Deployment [Deployment Plan, Monitoring and Maintenance Plan, Final Report, Final Presentation, Experience Documentation]	Deployment Plan		X	X	X	X	X	X
			Monitoring and Maintenance Plan		X		X	X	X	X
			Final Report		X		X	X	X	X
			Final Presentation		X			X		
			Experience Documentation		X			X	X	X
DC.10 TDSP Artifacts	DTS.3 TDSP: The Team Data Science Process (Microsoft, 2016)	Business understanding [Charter document, Data sources, Data dictionaries]	Charter document			X		X		
			Data sources		X	X	X	X	X	X
			Data dictionaries		X	X	X	X	X	X
		Data acquisition and understanding [Data quality report, Solution architecture, Checkpoint decision]	Data quality report		X	X		X	X	X
			Solution architecture			X		X	X	X
			Checkpoint decision		X	X	X	X	X	X
		Modeling [Model]	Model		X	X	X	X	X	X
		Deployment [A status dashboard that displays the system health and key metrics, A final modeling report with deployment details, A final solution architecture document]	A status dashboard that displays the system health and key metrics			X		X		
			A final modeling report with deployment details		X	X		X	X	X
			A final solution architecture document			X		X	X	X
		Customer acceptance [Exit report of the project for the customer]	Exit report of the project for the customer		X	X		X		
DC.14 DDSL Products	DTS.4 DDSL: Domino Data Science Lifecycle (Domino Data Lab, 2017)	Ideation [Project Scope document, Project Kick-off, Model Requirements Doc]	Project Scope document				X	X		
			Project Kick-off				X	X		
			Model Requirements Doc		X	X	X	X	X	X
		Data Acquisition and Exploration [Data Dictionary]	Data Dictionary		X	X	X	X	X	X
		Research and Development [*Data Model Experiment]	Data Model Experiment		X	X	X	X	X	X
		Validation [*Validated Data Model]	Validated Data Model		X	X	X	X	X	X
		Delivery [*Production Data Model]	Production Data Model		X		X	X	X	X
		Monitoring [Monitoring & Training Plan]	Monitoring & Training Plan		X	X	X	X	X	X

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Appendix B

DEMOGRAPHIC DATA OF THE PANEL OF EXPERTS

DEMOGRAPHIC DATA OF THE PANEL OF EXPERTS

(15 minutes)

"ISO/IEC 29110 -Basic Profile- for BDAS + - an aligned ISO/IEC 29110 – Basic Profile – Development Methodology for Big Data Software Systems in Small Business"

INSTRUCTIONS. Please answer the following statements regarding your demographic data:

1. Age range: ( ) <=30 years ( ) 31-40 years ( ) 41-50 years ( ) > 50 years	**2. Academic highest gained level:** ( ) Bachelor level ( ) Bachelor enhanced with Professional Certifications ( ) Master level ( )Doctorate level	**3. Main area of formal studies:** ( ) Computer Engineering ( ) Business Informatics ( ) Business Management ( ) Other
4. Main work setting: ( ) Business enterprise ( ) University/Research Unit ( ) Government Unit	**5. Scope of work setting:** ( ) Regional ( ) Nationwide ( ) Worldwide	**6. Region of working setting:** ( ) USA/CAN ( ) Europe ( ) Asia ( ) Latin America
7. Years in work settings: ( ) 1-5 years ( ) 6-10 years ( ) 11-15 years ( ) 16-20 years ( ) 20 or more years	**8. Main Work Position:** ( )Academic/Researcher ( ) IT Project Manager / IT Consultant ( ) Business Manager / Business Consultant ( ) IT Senior Developer	

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9A. Years involved (i.e. knowing, using, teaching, investigating or giving consulting) on LIGHTWEIGHT PROCESS (Disciplined Agile, ISO/IEC 29110 standard, RUP for Small Projects, MSF for Small Projects, or Hybrid Scrum-XP): ( ) <1 year ( ) 1-3 years ( ) 4-6 years ( ) 7-9 years ( ) 10 or more years	**9B. Years involved (i.e. knowing, using, teaching, investigating or giving consulting) on Data Science Analytics Systems:** ( ) <=5 years ( ) 6-10 years ( ) 11-15 years ( ) 16-20 years ( ) >20 years
10A. Number of projects (academic, training or consulting ones) involved with on LIGHTWEIGHT PROCESS (Disciplined Agile, ISO/IEC 29110 standard, RUP for Small Projects, MSF for Small Projects, or Hybrid Scrum-XP): ( ) 1-3 ( ) 4-6 ( ) 7-9 ( ) 10 or more	**10B. Number of projects (academic, training or consulting ones) involved on Data Science Analytics Systems:** ( ) 1-3 ( ) 4-6 ( ) 7-9 ( ) 10 or more
11A. Self-evaluation on the expertise level on LIGHTWEIGHT PROCESS (Disciplined Agile, ISO/IEC 29110 standard, RUP for Small Projects, MSF for Small Projects, or Hybrid Scrum-XP): ( ) very high level of expertise ( ) high level of expertise ( ) moderate level of expertise ( ) low level of expertise ( ) very low level of expertise	**11B. Self-evaluation on the expertise level on Data Science Analytics Systems:** ( ) very high level of expertise ( ) high level of expertise ( ) moderate level of expertise ( ) low level of expertise ( ) very low level of expertise

Thanks very much for your valuable participation!

Main Design Science Research Team

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Appendix C

CONCEPTUAL EVALUATION BY PANEL OF EXPERTS

CONCEPTUAL EVALUATION BY PANEL OF EXPERTS

(15 minutes)

"ISO/IEC 29110 -Basic Profile- for BDAS + - an aligned ISO/IEC 29110 – Basic Profile – Development Methodology for Big Data Software Systems in Small Business"

INSTRUCTIONS. Please respond the following statements regarding the conceptual validity of the **ISO/IEC 29110 -Basic Profile- for BDAS + - an aligned ISO/IEC 29110 – Basic Profile – Development Methodology for Big Data Software Systems in Small Business**. You must respond to each one of the following 7 statements marking the score (1..5) that you consider as valid. Please answer all 7 statements. No answered statement will be counted as neutral (score 3).

V1.	**The conceptual product (ISO/IEC 29110 -Basic Profile- for BDAS +) is supported by robust theoretical knowledge (e.g. based on scientific literature).**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**
V2.	**The theoretical knowledge used for elaborating this conceptual product (ISO/IEC 29110 -Basic Profile- for BDAS +) is relevant for the addressed topic.**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**
V3.	**The scientific literature considered for elaborating this conceptual product (ISO/IEC 29110 - Basic Profile- for BDAS +) does not present important omissions for the topic.**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**
V4.	**The conceptual product (ISO/IEC 29110 -Basic Profile- for BDAS +) is logically coherent.**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**
V5.	**The conceptual product (ISO/IEC 29110 -Basic Profile- for BDAS +) is adequate for achieving the purpose of its utilization.**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**
V6.	**The conceptual product (ISO/IEC 29110 -Basic Profile- for BDAS +) provides new scientific-based knowledge (e.g. it is not a just a duplication of an existent conceptual product).**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**
V7.	**The presentation style of the conceptual product (ISO/IEC 29110 -Basic Profile- for BDAS +) is adequate for a scientific report.**						
	Strongly disagree	**1**	**2**	**3**	**4**	**5**	**Strongly agree**

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Open Comments

Please feel free to add comments (if any) to improve the conceptual product ISO/IEC 29110 -Basic Profile- for BDAS +

Thanks very much for your valuable participation as an academic or professional expert !

Main Design Science Research Team

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Appendix D

USABILITY EVALUATION BY PANEL OF EXPERTS

PILOT USABILITY EVALUATION BY PANEL OF EXPERTS (30 minutes)

"ISO/IEC 29110 -Basic Profile- for BDAS + - an aligned ISO/IEC 29110 – Basic Profile – Development Methodology for Big Data Software Systems in Small Business"

INSTRUCTIONS. Please respond the following statements regarding the 7 usability metrics for the **ISO/IEC 29110 -Basic Profile- for BDAS + - an aligned ISO/IEC 29110 – Basic Profile – Development Methodology for Big Data Software Systems in Small Business**. You must respond all items marking the score (1..5) that you consider as valid. Please answer all items. No answered statement will be counted as neutral (score 3).

USEFULNESS – *is the degree to which using the new TOOL is perceived as being better than using the current used TOOL.*	STRONGLY DISAGREE	DISAGREE	NETURAL	AGREE	STRONGLY AGREE	STRONGLY DISAGREE	DISAGREE	NETURAL	AGREE	STRONGLY AGREE
	RESPONSES FOR TOOL X = ISO/IEC 29110 -Basic Profile- for BDAS +					RESPONSES FOR TOOL Y = Any other BDAS Methodology you use.				
1. If I were to use the TOOL (X|Y), it would enable me to accomplish the agile development of a BDAS more quickly.	1	2	3	4	5	1	2	3	4	5
2. If I were to use the TOOL (X|Y), the quality of my work (agile development of a BDAS) would improve.	1	2	3	4	5	1	2	3	4	5
3. If I were to use the TOOL (X|Y), it would enhance my effectiveness on the job (related with the agile development of a BDAS).	1	2	3	4	5	1	2	3	4	5
4. If I were to use the TOOL (X|Y), it would make my job easier (related with the agile development of a BDAS).	1	2	3	4	5	1	2	3	4	5

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EASE OF USE - *is the degree to which using the new TOOL is perceived as being free of effort.*	STRONGLY DISAGREE	DISAGREE	NETURAL	AGREE	STRONGLY AGREE	STRONGLY DISAGREE	DISAGREE	NETURAL	AGREE	STRONGLY AGREE
	RESPONSES FOR TOOL X = ISO/IEC 29110 -Basic Profile- for BDAS +					RESPONSES FOR TOOL Y = Any other BDAS Methodology you use.				
1. Learning to use the TOOL (X|Y), would be easy for me.	1	2	3	4	5	1	2	3	4	5
2. If I were to use the TOOL (X|Y), it would be easy to operate.	1	2	3	4	5	1	2	3	4	5
3. If I were to use the TOOL (X|Y), it would be difficult to use.	1	2	3	4	5	1	2	3	4	5

VALUE - *the degree to which using the new TOOL is perceived as a value delivery entity for users by savings on money, time, and the provision of a variety of valuable resources, and by an overall value.*	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH	VERY LOW	LOW	MODERATE	HIGH	VERY HIGH
	RESPONSES FOR TOOL X = ISO/IEC 29110 -Basic Profile- for BDAS +					RESPONSES FOR TOOL Y = Any other BDAS Methodology you use.				
1. The value for saving money by using the TOOL (X|Y), for the agile development of a BDAS is:	1	2	3	4	5	1	2	3	4	5
2. The value for saving valuable time by using the TOOL (X|Y), for the agile development of a BDAS is:	1	2	3	4	5	1	2	3	4	5
3. The value for finding the information on roles-actions, phases-activities and artifacts-templates for the agile development of a BDAS by using the TOOL (X|Y) is:	1	2	3	4	5	1	2	3	4	5
4. In overall, the value of using the TOOL (X|Y), for the agile development of a BDAS is:	1	2	3	4	5	1	2	3	4	5

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NOTE: please answer the 3 following questions. They have the same inquiry, but their scales are different:

ATTITUDE.01	EXTREMELY NEGATIVE						EXTREMELY POSITIVE	EXTREMELY NEGATIVE						EXTREMELY POSITIVE
All considered things, using TOOL (X Y) in my job within next six months would be:	RESPONSES FOR TOOL X = ISO/IEC 29110 -Basic Profile- for BDAS +							RESPONSES FOR TOOL Y = Any other BDAS Methodology you use.						
	-3	-2	-1	0	+1	+2	+3	-3	-2	-1	0	+1	+2	+3

ATTITUDE.02	EXTREMELY BAD						EXTREMELY GOOD	EXTREMELY BAD						EXTREMELY GOOD
All considered things, using TOOL (X|Y) in my job within next six months would be:	RESPONSES FOR TOOL X = ISO/IEC 29110 -Basic Profile- for BDAS +							RESPONSES FOR TOOL Y = Any other BDAS Methodology you use.						
	-3	-2	-1	0	+1	+2	+3	-3	-2	-1	0	+1	+2	+3

ATTITUDE.03	EXTREMELY HARMFUL						EXTREMELY BENEFICIAL	EXTREMELY HARMFUL						EXTREMELY BENEFICIAL
All considered things, using TOOL (X|Y) in my job within next six months would be:	RESPONSES FOR TOOL X = ISO/IEC 29110 -Basic Profile- for BDAS +							RESPONSES FOR TOOL Y = Any other BDAS Methodology you use.						
	-3	-2	-1	0	+1	+2	+3	-3	-2	-1	0	+1	+2	+3

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OPEN COMMENTS:

Please feel free to add any open comment on benefits of using the ISO/IEC 29110 -Basic Profile- for BDAS +vs your current tool (methodology) for the agile development of a BDAS:

Benefits from using ISO/IEC 29110 -Basic Profile- for BDAS +:

Benefits from using my current TOOL (methodology):

Please feel free to add any open comment on limitations of using the ISO/IEC 29110 -Basic Profile- for BDAS +vs your current tool for the agile development of a BDAS:

Limitations from using ISO/IEC 29110 -Basic Profile- for BDAS +:

Limitations from using my current TOOL (methodology):

Thanks very much for your valuable participation!

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Appendix E

Comments from CONCEPTUAL EVALUATION from pilot sample of evaluators

Comments (if any) to improve the conceptual product ISO/IEC 29110 -Basic Profile- for BDAS +
The product is very well done, maybe it's just worth to standardize some terms. For example, client -> customer modelling -> modeling
Increased attention on data security would be valuable. There is IT security in this, but I feel that does not address the nuances of data security. To a lesser extent, this work assumes access to all data needed. That may not be true. A small entity may need to acquire a data source or acquire access to a data source. Working with data stewards may need to be included.
This is an excellent work, for Data Science implementation, and ease to understand
I don't know if this fits into this conceptual product, there are no detailed references to previous studies or reports to support claims about the failure rate of BDAS projects or the effectiveness of lightweight approaches.
A bit linear but exhaustive account of activities and dependencies. Should integrate EU's PM2 and OMG's Essence frameworks.
The conceptual product is clearly structured and well-aligned with the needs of small organizations working with Big Data systems
The idea of using ISO/IEC 29110 for BDAS is simple, very practical and at the same time provides the rigor needed to accomplish the stated goal to produce BDAS SDLC type guidelines for Very Small Entities.
The conceptual product is well aligned with ISO/IEC 29110 Basic Profile and provides a solid foundation for BDAS+. A potential improvement would be to expand the practical guidance such as templates, sample artifacts, tailoring strategies, and agile-aligned workflows—to help small development teams implement the processes more efficiently in real projects

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Appendix F

Comments from USABILITY EVALUATION from pilot sample of evaluators

Benefits from using ISO/IEC 29110 -Basic Profile- for BDAS +:	Benefits from using my current TOOL (methodology):
Easy to understand, easy to implement on a small scale, with good benefits and improvements	Benefits and improvements
Ensure costumer satisfaction	ISO/IEC
"Congratulations to the authors for their valuable research. The way in which the "ISO/IEC 29110 -Basic Profile- for BDAS + - an aligned ISO/IEC 29110 -Basic Profile - Development Methodology for Big Data Software Systems in Small Business", was easy to understand, and I am sure it will be very useful for those who decide to use it."	
It provides a fairly complete and up-to-date guide to today's Data world.	It is already well verified and supported, due to its age.
It's let me be more efficient and quickly.	I already know it
A specialized methodology is useful and contributes more to this type of projects.	
Es más sencillo de entender la metodología, en comparación de otras metodologías ya sea agiles o rigurosas, siento que es más organizado en la forma de plantear un proyecto porque a veces no sabes cómo empezar	Pues como estoy relacionado, la manera de trabajarla de manera eficiente y continua, a diferencia del ISO/IEC 29110 -Basic Profile- for BDAS + que necesitaria practicar
Would be cost-benefits & better response time. It will start on a slower upward curve then will continue on a faster upward curve.	It will continue on a slower upward curve
Permitir definir roles, actividades y productos de trabajo mejorando la organización, reduce los errores y defectos en el software al seguir un proceso más estructurado, así como facilita la entrega de softwares que cumplen con los requisitos del cliente	Se pueden combinar los beneficios de Scrum con base de datos, mejorando de esta manera la toma de decisiones, optimizar el rendimiento del equipo y aumentar la calidad del producto
Specific to BDAS. Helps navigate complexity, creates common language for all stakeholders. Even if not followed by the book, at least all have the same frame of reference.	Simpler. More Agile. Yet not exhaustive.
While it is true that in most cases using a tool helps, using a specific tool such as ISO/IEC 29110-Basic Profile-for BDAS+ for a specifically small development environment would definitely be preferable.	n/a
I especially commend the focus on understanding the business problem and business objectives. Too often people begin with data, or with a superficial understanding (if any) of the problem to be addressed.	
It provides a comprehensive yet manageable approach to implement data science projects in VSE.	It provides some structure in the project work.
ISO/IEC 29110 – Basic Profile – improves BDAS development by providing a clear, lightweight, and standardized process that enhances quality, reduces rework, and increases team efficiency	My current methodology offers a familiar workflow and supports day-to-day agile development with reasonable flexibility and practicality

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Limitations from using ISO/IEC 29110 -Basic Profile- for BDAS +:	**Limitations from using my current TOOL (methodology):**
Small scale	Difficult to understand and implement, few benefits in a short time
Complexity of documentation and implementation	ISO
Currently, as it is a new proposal, it needs to be verified by the various stakeholders.	Although I already mentioned that it is well supported, it lacks further adaptations, as it was proposed at a time when the data world was not evolving as fast as it is today.
It's new for me, but it's easy to learn.	It has so many phases and steps.
	Although the standards are functional, in most of them the detail of how to do it is little
Es interesante en la usabilidad porque siento que es más libre la metodología	Dependiendo la metodología que trabajo, como las tradicionales es acorde de los procesos se deben de realizar sin estar iterando otra vez que a veces se ocupa, que son las que más uso
Learning curve	Not as fast and effective.
Está diseñado para pequeñas organizaciones así que cuenta con limitaciones para proyectos grandes, dinámicos y con seguridad avanzada	Al basarse en la recopilación y análisis de datos, básicamente depende de la calidad de los datos y la interpretación que se tenga de las métricas, pudiendo generar sesgos
A bit linear. Similar to OMG SPEM and OpenUP/RUP. Distinguishing how it is extending them is required.	Not specific to BDAS.
Based on the stated goals, it accomplishes them in my opinion.	It requires more effort to create and maintain the necessary documentation.
Although lightweight, ISO/IEC 29110 still requires time for teams to understand, adopt, and tailor the prescribed work products and activities to their BDAS context.	The current tool provides limited structure, making it harder to ensure consistency and traceability across BDAS development activities

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