	IDunion blockchain dashboard
Online team meeting	https://fau.zoom.us/j/68046406469?pwd=dWdTVG1lQnMrZ0hUUGVXSE1udnVYdz09
Production system (if any)	...
Test system (if any)	...
GitHub repository	https://github.com/amosproj/amos2022ss06-idunion-blockchain-dashboard
GitHub kanban board (project)	https://github.com/amosproj/amos2022ss06-idunion-blockchain-dashboard/projects/1
Team T-shirt (white)	
Team T-shirt (black)	https://www.shirtinator.de/loadBasket/3S3YdkBrdvw
Additional materials	
Course materials	https://drive.google.com/drive/folders/0B7LJZKdwtsyMdXRtbm5ZSEtZb3M
Lecture slides	https://github.com/dirkriehle/amos-course/tree/master/Generated/Lecture%20slides
Project descriptions	https://drive.google.com/drive/folders/1syeE4vsCDiRe-dckElviinxZhIzddqdL?usp=sharing
Online lecture hall	https://fau.zoom.us/j/69353200264
Fau-box link	https://faubox.rrze.uni-erlangen.de/getlink/fi715pnEj7PPdtv2zsxgbF4x/

Last Name	First Name	GitHub User Name	Email Address
Hemanna Geethakumary	Murali Krishna	mkhg	murali.k.hemanna@fau.de
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Hoang	Pham Minh Khai	khai-pi	khai.pham.hoang@fau.de
			khaiphamhoang.pi@gmail.com (used for happyness index and standup mail, github)
Kokardekar	Gaurav	Gaurav4449	gaurav.kokardekar@fau.de
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Goals	Achieve the requirements defined by the industry partner = happy customer
	We want to create a space where everyone can learn from each other and where we benefit from our different strengths
Meeting norms	If anyone can not attend it shall be indicated via e-mail
	Everyone shows up at time or indicates via Signal the delay
	Camera should be turned on (at least when speaking up)
Working norms	If someone struggles with a task we support each other and give contribution to the person who helped
	The tasks to be worked on are distributed and assigned ownership
	Everyone works on the homework and informs others in standup e-mails when it's a common task
	MS Teams for tasks without feature: https://teams.microsoft.com/l/entity/com.microsoft.teamspace.tab.planner/_djb2_msteams_prefix_2602738921?context=%7B%22subEntityId%22%3Anull%2C%22channelId%22%3A%2219%3AV15KRB5BjbRtz-gz_YZplzW2uR_PR1EeDUJndPmqRNY1%40thread.tacv2%22%7D&groupId=4091629d-8600-4c86-a111-aa2dbade99f1&tenantId=b2efcef3-8496-40b8-9de8-f135982f3461
Coordination norms	Every job has a designated person responsible for it
	We volunteer for common jobs
Communication norms	Communication with industry partner via e-mail
	MS Teams AND Signal used for internal team communication during the week
	The team e-mail shall be put in CC on every communication via e-mail
	We check MS Teams AND Signal at least every second day
Consideration norms	We discuss disagreement openly in both the team meetings and MS Teams
	We vote for a final resolution
Cont. improvement norms	We jointly review the happiness index in every team meeting
Rewards	We celebrate each other virtually and if we meet offline the responsible person gets a free drink of their choice
Sanctions	We apologize by bringing cookies OR if online ? coffee break and the rule violator has to entertain :p

#	Meeting Day	Uni	Comment	Product Owner	Software Developer	Release Manager	Scrum Master
1	2022-04-27	No		Anna, David	Ram, Julian, Tanvir, Soham, Khai, Murali	Anna	Gaurav Kokardekar
2	2022-05-04	No		Anna, David	Ram, Julian, Tanvir, Khai, Murali, Muhammad, Swar	Julian	not present
3	2022-05-11	Yes		Anna, David	Ram, Julian, Tanvir, Khai, Murali, Muhammad,	Murali	Gaurav Kokardekar
4	2022-05-18	No		Anna, David	Julian, Khai, Murali, Muhammad,	Julian	Gaurav Kokardekar
5	2022-05-25	Yes		Anna, David	Julian, Khai, Murali, Muhammad	Khai	Gaurav Kokardekar
6	2022-06-01			Anna, David	Julian, Khai, Murali, Muhammad	Muhammad	Gaurav Kokardekar
7	2022-06-08	Yes	Mid-term due	Anna, David	Julian, Khai, Murali, Muhammad	Murali	Gaurav Kokardekar
8	2022-06-15			Anna, David	Julian, Khai, Murali, Muhammad	Khai	Gaurav Kokardekar
9	2022-06-22			Anna, David	Julian, Khai, Murali, Muhammad	Muhammad	Gaurav Kokardekar
10	2022-06-29	Yes		Anna, David	Julian, Khai, Murali, Muhammad	Murali	Gaurav Kokardekar
11	2022-07-06						
12	2022-07-13						
13	2022-07-20	Yes					
14	2022-07-27		Demo day!				
15	2022-08-03		Retrospective				

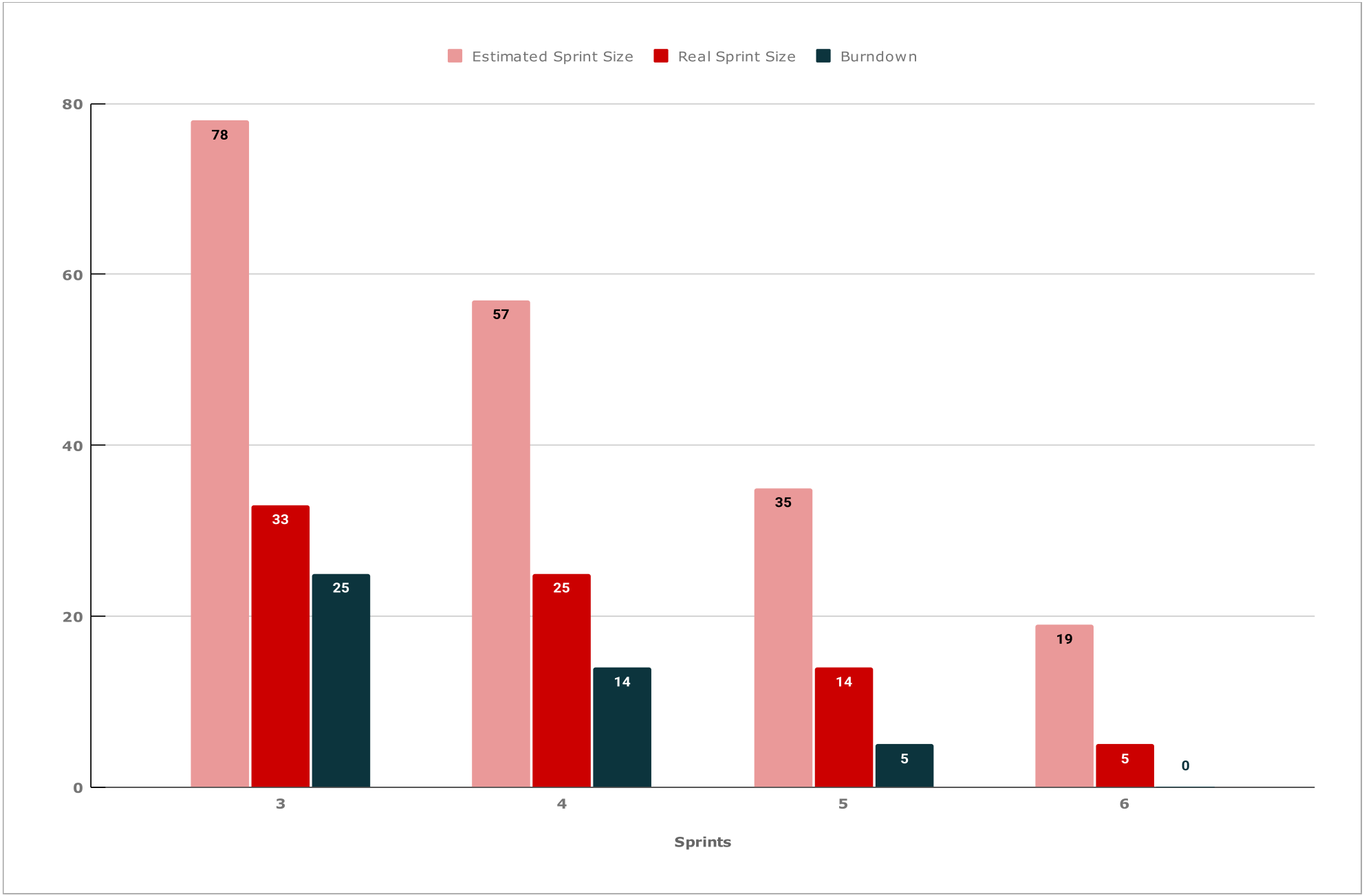
Product Vision	Project Mission
The IDunion project (see https://idunion.org/?lang=en) is aiming to create a decentralized identity management. With the help of the Hyperledger stack it is possible to create, issue and manage identity information in a decentralized ledger. The IDunion network connects it´s participants and enables a trustworthy, secure, effective and user-friendly ecosystem. The network nodes create and store various types of data. With the help of the data the network activity and the ledger can be analzyed in order to optimize workflows, share credential information or find new business cases. Processing and displaying the data is crucial for leveraging the information value.	In the interest of our industry partner the mission is to identify data of possible interest and display it in a dashboard. By displaying the data in the dashboard it is easy and intuitive to get the impression of the network activity and ledger status. Based on the displayed information the industry partner can optimize it´s businesses. Project information (provided by tutors, industry partner): "The goal of the project is to develop a metrics engine and a dashboard for the IDunion blockchain. 1. The (UI-less) metrics engine 1.1 Collects data from the test instances of the blockchain and computes predefined metrics (a.k.a. KPIs, keyperformance indicators) 1.2 Allows for the registration of interest in these metrics and the provision of notifications if provided metric values match a defined (boolean) query 2. The dashboard 2.1 Visualizes the metrics over time (using Grafana) Can be configured by a user to meet their needs 2.2 Supports user accounts and role definitions where Different roles get different default layouts 2.3 Can register interest in events where Events correspond to metrics engine notifications 2.4 Can display events"

Product Vision	Project Mission

Term	Definition
Distributed ledger	A distributed ledger is a database that is consensually shared and synchronized across multiple sites
Blockchain	A Blockchain is a distributed and shared digital ledger of data entities
Key performance indicator (KPI)	A Key performance indicator is an attribute of the network or Blockchain with valuable information for the business owner
Node	A node is a participant in the network contributing to the Blockchain
Hyperledger	Hyperledger is an open source effort to advance cross-industry blockchain technologies for business use
Hyperledger Indy	Hyperledger Indy provides tools, libraries, and reusable components for providing digital identities rooted on distributed ledgers
Indy Monitor	A Indy Monitor is a toolset for monitoring the node status
DID	A DID is a decentralized identifier that refers to any entity within a digital identity
DID Entity	A DID Entity is a data structure comprised of a collection of key-value pairs
DID Document	A DID Document is a JSON-LD serialization of a DID Entity
Prometeus	Prometeus is a data storage for information of the network or Blockchain
Grafana dashboard	A Grafana Dashboard is a board displaying the data of the network or Blockchain in a user friendly format
Metrics engine	A metrics engine is a program that is processing the data of the network and blockchain calculating the key performance indicators
Node-Exporter	Prometheus exporter for hardware and OS metrics, in our project we are using it to collect data from node to database

#	Theme	Goal	Feature Name	Est. Size (Feature)	Est. Size (Sprint)	Real Size (Feature)	Real Size (Sprint)	Burn-Down
Project								
	Total			78		33		
Sprints								
3	Set up and showcase			21	78	8	33	25
4	Indy Monitor			22	57	11	25	14
5	Prometeus			16	35	9	14	5
6	KPI and Home View			19	19	5	5	0
Features								
3	Set up and showcase							
		Set up the environment and showcase Grafana						
			Register	5		5		
			Set up Hyperledger environment	2		3		
			Create Network of Hyperledger nodes	8				
			Create first record for Hyperledger	3				
			Define basic architecture for the project	3				
4	Indy Monitor							
		Develop architecture and set up Indy Monitor						
			Define basic architecture for the project	3		5		
			Align and define branch-strategy	2		1		
			Set up Indy Monitor	3		5		
			Define and set-up documentation	1				
			Indy monitor data transfered to prometeus.io	5				
			Create first record for Hyperledger	3				
			Set up Prometeus with Grafana	5				
5	Prometeus							
		Get started with Prometeus data base						
			Key performance indicators in Prometeus.io	5		0		
			Define and set-up documentation	1		3		
			Indy monitor data transfered to prometheus.io	5		5		
			Setup Prometheus with Grafana	5		1		
			List all available data	3				
6	KPI and Home View							
		Add a KPI and home view for the data						
			Refactor the fetch data script	3		2		
			Add min. 1 new KPI to the metrics engine	8				
			Design a grafana editable general "home" view	3				
			List all available data	3		3		
Data								
3	Grafana Dashboard	As a user I want / need a dashboard So that i can read the data (find out basic information about the ledger)	Showcase Grafana	5	21	5	24	16
3	Blockchain	As a developer/team member I want / need an common environment So that all the team members are aligned and reproducable results will be possible	Set up Hyperledger environment	2	21	3	24	16

#	Theme	Goal	Feature Name	Est. Size (Feature)	Est. Size (Sprint)	Real Size (Feature)	Real Size (Sprint)	Burn-Down
4	Architecture	As a team member I want / need more details about the technical implementation So that the features can be assigned to an system element and work easier distributed	Define basic architecture for the project	3	22	5	25	14
4	Development	As a developer I want / need branching and merging strategy So that commits and the code are organized	Align and define branch-strategy	2	22	1	25	14
4	Indy Monitor	As a user I want / need Hyperledger Indy Monitor set up So that information of the ledger can be processed further	Set up Indy Monitor	3	22	5	25	14
5	Prometeus	As a user I want / need data stored in Prometeus.io So that it can be provided to Grafana	Key performance indicators in Prometeus.io	5	19	0	12	3
5	Documentation	As a user and team member I want / need a project handbook sceleton So that I can easily get an overview of the project	Define and set-up documentation	1	19	3	12	3
5	Indy Monitor / Prometeus	As a user I want / need data collected with indy monitor stored in prometheus (https://prometheus.io/docs/introduction/overview/) So that information is in the end available for Grafana	Indy monitor data transfered to prometheus.io	5	19	5	12	3
5	Prometeus / Grafana	As a user I want / need data processed with Prometeus.io transmitted to Grafana So that information can be displayed in a dashboard	Setup Prometheus with Grafana	5	19	1	12	3
6	Indy Monitor	As a developer I want / need a parameterized script So that the data can be fetched upon parameter input in command line	Refactor the fetch data script	3	17	2	16	11
6	Indy Monitor	As a user I want / need an overview of all available data stored in the ledger and network So that I can identify interesting data or gaps, respective data to be created	List all available data	3	17	3	16	11

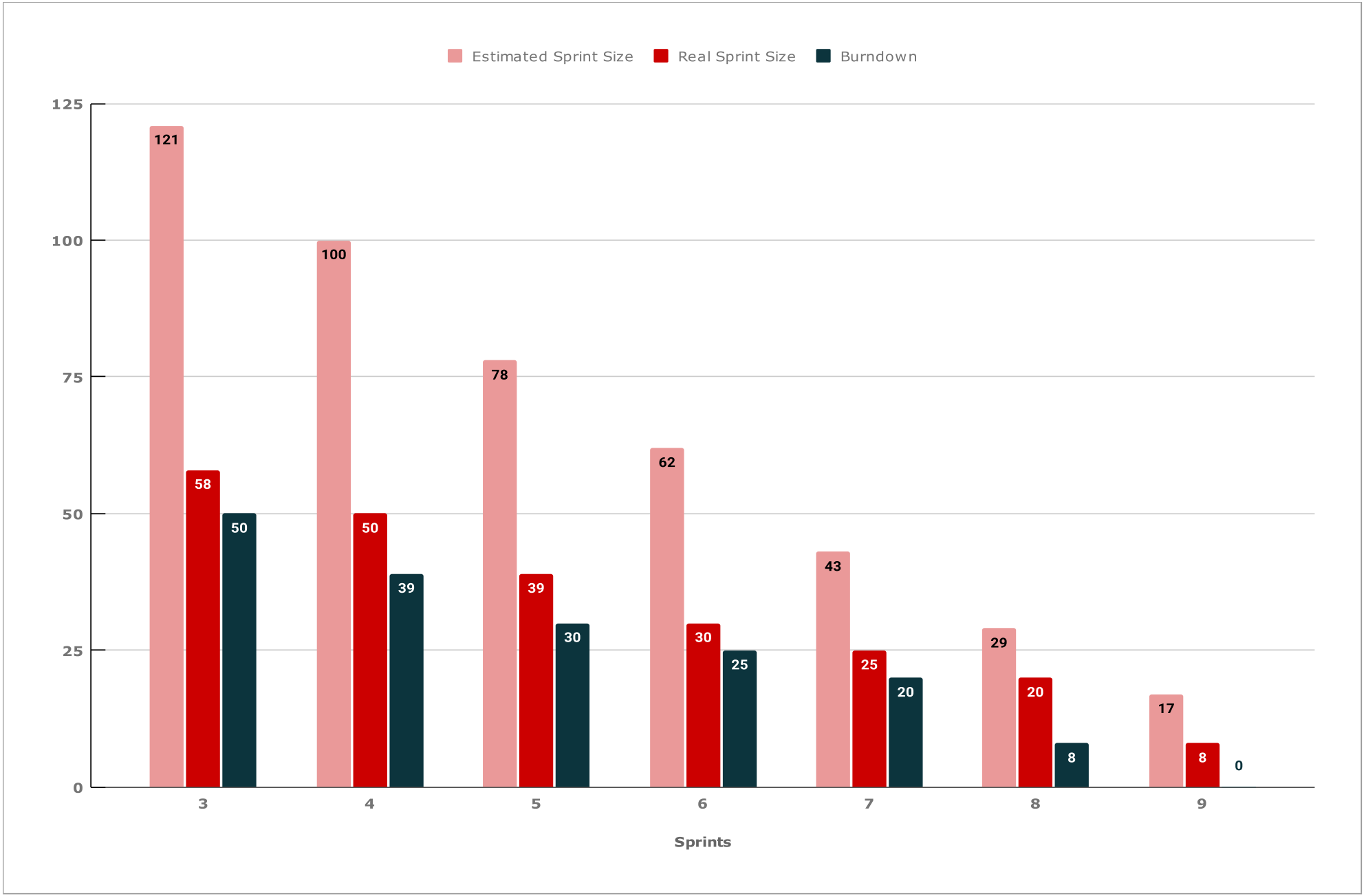

Estimated Sprint Size
Real Sprint Size
Burndown
80
60
40
20
0
78
33
25
57
25
14
35
14
5
19
5
0
3
4
5
6
Sprints

#	Theme	Goal	Feature Name	Est. Size (Feature)	Est. Size (Sprint)	Real Size (Feature)	Real Size (Sprint)	Burn-Down
Project								
	Total			121		58		
Sprints								
					Estimated burn-down		Real burn-down	
3	Set up and showcase			21	121	8	58	50
4	Indy Monitor			22	100	11	50	39
5	Prometeus			16	78	9	39	30
6	KPI and Home View			19	62	5	30	25
7	KPI and Home View - Part 2			14	43	5	25	20
8	Home view, role concept and toolchain			12	29	12	20	8
9	More wireframes and saving the dashboard			17	17	8	8	0
Features								
3	Set up and showcase							
		Set up the environment and showcase Grafana						
			Register	5		5		
			Set up Hyperledger environment	2		3		
			Create Network of Hyperledger nodes	8				
			Create first record for Hyperledger	3				
			Define basic architecture for the project	3				
4	Indy Monitor							
		Develop architecture and set up Indy Monitor						
			Define basic architecture for the project	3		5		
			Align and define branch-strategy	2		1		
			Set up Indy Monitor	3		5		
			Define and set-up documentation	1				
			Indy monitor data transfered to prometeus.io	5				
			Create first record for Hyperledger	3				
			Set up Prometeus with Grafana	5				
5	Prometeus							
		Get started with Prometeus data base						
			Key performance indicators in Prometeus.io	5		0		
			Define and set-up documentation	1		3		
			Indy monitor data transfered to prometheus.io	5		5		
			Setup Prometheus with Grafana	5		1		
			List all available data	3				
6	KPI and Home View							
		Add a KPI and home view for the data						
			Refactor the fetch data script	3		2		
			Add min. 1 new KPI to the metrics engine	8				
			Design a grafana editable general "home" view	3				
			List all available data	3		3		

#	Theme	Goal	Feature Name	Est. Size (Feature)	Est. Size (Sprint)	Real Size (Feature)	Real Size (Sprint)	Burn-Down
7	KPI and Home View - Part 2							
		Add a KPI, display it and add home view for the data						
			Display key performance indicators in Grafana	3				
			Add min. 1 new KPI to the metrics engine	8		5		
			Implement the Wireframe in grafana as editable "home" view	3				
8	Home view, role concept and toolchain							
		Create wireframe, define role concept, write toolchain script, refactor storage of read transaction time						
			Create a wireframe of "home" view in Grafana	3		3		
			Define role concept in Grafana	3		3		
			Write set up script for toolchain	3		3		
			Store average read transaction time in global database	3		3		
9	More wireframes and saving the dashboard							
		Create wireframes, implement wireframe, save dashboard						
			Create wireframe of every defined role	3				
			Implement the wireframe in Grafana as editable "home" view	3		3		
			Provide test for the new average read transaction	3		2		
			Install alert messages for data updates	3				
			Saving the dashboard in Grafana	3		2		
			Update documentation concerning shell script	2		1		
10	Alert messages and upgrade metrics engine							
		Implement alert messages, extend the fetch validator and detect suspicious nodes						
			Establish KPI for a suspicious node	5				
			Extend fetch validator script to local json files	3				
			Install alert messages for data updates	3				
Data								
3	Grafana Dashboard	As a user I want / need a dashboard So that i can read the data (find out basic information about the ledger)	Showcase Grafana	5	21	5	24	16
3	Blockchain	As a developer/team member I want / need an common environment So that all the team members are aligned and reproducable results will be possible	Set up Hyperledger environment	2	21	3	24	16
4	Architecture	As a team member I want / need more details about the technical implementation So that the features can be assigned to an system element and work easier distributed	Define basic architecture for the project	3	23	5	26	15
4	Development	As a developer I want / need branching and merging strategy So that commits and the code are organized	Align and define branch-strategy	2	23	1	26	15
4	Indy Monitor	As a user I want / need Hyperledger Indy Monitor set up So that information of the ledger can be processed further	Set up Indy Monitor	3	23	5	26	15
5	Prometeus	As a user I want / need data stored in Prometeus.io So that it can be provided to Grafana	Key performance indicators in Prometeus.io	5	19	0	12	3

#	Theme	Goal	Feature Name	Est. Size (Feature)	Est. Size (Sprint)	Real Size (Feature)	Real Size (Sprint)	Burn-Down
5	Documentation	As a user and team member I want / need a project handbook sceleton So that I can easily get an overview of the project	Define and set-up documentation	1	19	3	12	3
5	Indy Monitor / Prometeus	As a user I want / need data collected with indy monitor stored in prometheus (https://prometheus.io/docs/introduction/overview/) So that information is in the end available for Grafana	Indy monitor data transfered to prometheus.io	5	19	5	12	3
5	Prometeus / Grafana	As a user I want / need data processed with Prometeus.io transmitted to Grafana So that information can be displayed in a dashboard	Setup Prometheus with Grafana	5	19	1	12	3
6	Indy Monitor	As a developer I want / need a parameterized script So that the data can be fetched upon parameter input in command line	Refactor the fetch data script	3	17	2	16	11
6	Indy Monitor	As a user I want / need an overview of all available data stored in the ledger and network So that I can identify interesting data or gaps, respective data to be created	List all available data	3	17	3	16	11
7	Indy Monitor	As a user I want / need a new KPI (not yet available) So that more information about the network and ledger is available	Add min. 1 new KPI to the metrics engine	8	14	5	5	9
8	Grafana	As a user I want / need access to dashboard based on my access right So that information is only available to the dedicated user group (e.g. Engineering department, financial department, management, etc.)	Define role concept in Grafana					
8	Grafana	As a user I want / need the data of a certain time frame So that the data of the time frame is displayed	Implement time frame filter for users in Grafana					
8	Prometeus	As a user I want / need to be informed if the key performance indicators are within a defined data range So that I do not need to frequently check manually the dashboard	Install alert messages for data updates					
9	Grafana	As a user I want / need the data of the identity records displayed So that a overview of the identity records is provided	Display the identity records information in the dashboard					
9	Indy Monitor / Prometeus / Grafana	As a team member and user I want / need an discription of the dynamic behaviour So that I am aware of the process order	Define basic dynamic behaviour of the system					
10	Indy Monitor / Prometeus / Grafana	As a user I want / need see one transaction or change in the ledger and displayed in Grafana So that information is accesible and the status reported	Show-case one transaction					
	Grafana	As a developer I want / need a wireframe of the Grafana dashboard So that I know which metrics to visualize and how, in order to implement it in a separate step	Create a Wireframe of "Home" view for Grafana	3				
	Indy Monitor	As a developer I want / need a test for the new average read transaction time feature So that regression testing is available	Provide test for the new average read transaction time					
	Indy Monitor	As a developer I want / need the average read transaction time to be stored in the global database instead of in every single node So that the data is not redundant	Store average read transaction time in global database	3				
	Grafana	As a user with a role I want / need a Wireframe So that the relevant information for the role is defined and designed	Create Wireframe for every defined role	3				
	Grafana	As a user with a role I want / need to view only the data on the dashboard that is important for my role So that I can quickly see everything that I need to see	Implement the wireframes of the roles as different views in Grafana	3				
	Indy Monitor	As a developer I want / need a set up script So that the toolchain is set up reproducable	Write set up script for toolchain	3				
	Grafana	As a user I want / need to only see the most important information for my role when I open the Grafana dashboard So that I can quickly get an overview and view more detailed information only when needed/upon request	Implement the Wireframe in grafana as editable "home" view	3				

#	Theme	Goal	Feature Name	Est. Size (Feature)	Est. Size (Sprint)	Real Size (Feature)	Real Size (Sprint)	Burn-Down
	Grafana	As a user I want / need the data displayed in Grafana over time So that I can review the network status and ledger information	Display key performance indicators in Grafana	3				


Estimated Sprint Size
Real Sprint Size
Burndown
125
100
75
50
25
0
121
58
50
100
50
39
78
39
30
62
30
25
43
25
20
29
20
8
17
8
0
3
4
5
6
7
8
9
Sprints

#	Feature Definition of Done	Sprint Release Definition of Done	Project Release Definition of Done
	Feature has been fully implemented	Feature has been fully implemented	Feature integration testing passed
	All acceptance criteria were met	Feature has been merged into the mainline	No build failures
	All tests are passing	All acceptance criteria were met	All acceptance criteria were met
	No known errors	Product owner approved features	Product owner approved features
	Documentation updated	All tests are passing	All tests are passing
	Bill of materials updated	Peer code review passed	Peer code review passed
		Developers agreed to release	Developers agreed to release
		Documentation updated	Documentation completed
		Bill of materials updated	Bill of materials completed
			UAT (Siemens) approved

Type	Link / reference

\	Context	Name	Version	License	Comment
hyperledger/indy-sdk: indy-sdk (github.com)	official SDK for Hyperledger Indy, which provides a distributed-ledger-based foundation for self-sovereign identity	Indy-SDK	1.16.0	Apache License 2.0	
hyperledger/indy-node-monitor	Indy Node Monitor is a set of tools for monitoring the status of an Indy Ledger by querying the validator information of the nodes of the ledger	Indy Node-Monitor	0.4.0	Apache License 2.0	
https://github.com/grafana/grafana	Grafana as a visualization tool for querying, visualizing metrics of Hyperledger Indy Nodes	Grafana	8.5.0	GNU Affero General Public License v3.0	
https://github.com/prometheus	Database for Grafana	Prometheus	2.35.0	Apache License 2.0	
https://github.com/hyperledger/indy-vdr	A library and proxy server for interacting with Hyperledger Indy Node ledger instances	Indy-vdr	0.3.4	Apache License 2.0	
https://github.com/prometheus/node_exporter	Prometheus exporter for hardware and OS metrics	Node-Exporter	1.3.1	Apache License 2.0	
https://github.com/ivan111/vtree	This tool converts JSON strings into tree diagrams.	JSON to Tree Diagram Converter	N/A	Apache License 2.0	

Last Name	First Name	Value					
Hemanna Geethakumary	**Murali Krishna**	5		**4.33**	**NOK**		
Rosenberger	**Julian**						
López Caballero	**David**						
Hoang	**Pham Minh Khai**	3		0	No size		
Ali	**Muhammad**	5		1	Trivial size		
Kokardekar	**Gaurav**	-		2	Small size		
Sandrini	**Anna-Maria**	-		3	Medium size		
				5	Large size		
				8	Very large size		
				13	Too large (size)		