Prosjekthåndbok

Innhold

1. Arbeidskontrakt 5

1.1 Innledning 5

1.2 Dokumentansvarlig/sekretær 5

1.3 Product Owner 5

1.4 Scrum Master 5

1.5 Kvalitetssikring 6

1.5.1 Kode 6

1.5.2 Dokumentasjon 6

1.6 Prosedyrer 6

1.7 Interaksjon 8

2. Framdriftsplan 10

2.1 Jira timeline 10

2.2 Milestones (original) 11

2.3 Milestones (revised) 13

3. Møteinnkallinger 14

3.1 Meeting 1 14

3.2 Meeting 2 15

3.3 Meeting 3 16

3.4 Meeting 4 17

3.5 Meeting 5 18

3.6 Meeting 6.1 19

3.7 Meeting 6.2 20

3.8 Meeting 7 21

3.9 Meeting 8.1 22

3.10 Meeting 8.2 23

3.11 Meeting 9 24

4. Møtereferater 25

4.1 Meeting 1, Initial meeting 25

4.2 Meeting 2, Sprint 1-2 Demo Session 27

4.3 Meeting 3, Sprint 3-4 Demo Session 29
4.4 Meeting 4, Sprint 5-6 Demo Session 31
4.5 Meeting 5, Sprint 7-8 Demo Session 32
4.6 Meeting 6.1, Sprint 9-10 Demo Session 34
4.7 Meeting 6.2, Sprint 9-10 Demo Session 35
4.8 Meeting 7, Sprint 11-12 Demo Session 36
4.9 Meeting 8.1, Sprint 13-14 Demo Session 38
4.10 Meeting 8.2, Sprint 13-14 Demo Session 39
4.11 Meeting 9, Sprint 15-16 Demo Session 41
5. Sprint reports 43
5.1 Sprint 1 Review 43
5.2 Sprint 2 Review 45
5.3 Sprint 3 Review 46
5.4 Sprint 4 review 47
5.5 Sprint 5 review 48
5.6 Sprint 6 review 49
5.7 Sprint 7 review 50
5.8 Sprint 8 review 51
5.9 Sprint 9 review 52
5.10 Sprint 10 review 53
5.11 Sprint 14 review 54
5.12 Sprint 15 Review 55
5.13 Sprint 16 Review 56
5.14 Sprint 1 Retrospective 57
5.15 Sprint 2 Retrospective 58
5.16 Sprint 3 Retrospective 59
5.17 Sprint 4 Retrospective 60
5.18 Sprint 5 retrospective 61
5.19 Sprint 6 Retrospective 62
5.20 Sprint 7 Retrospective 63
5.21 Sprint 8 Retrospective 64
5.22 Sprint 9 Retrospective 65
5.23 Sprint 10 Retrospective 66

5.24 Sprint 11 Retrospective 67
5.25 Sprint 12 Retrospective 68
5.26 Sprint 13 Retrospective 69
5.27 Sprint 14 Retrospective 70
5.28 Sprint 15 Retrospective 71
5.29 Sprint 16 Retrospective 72
5.30 Sprint 1 burndown 73
5.31 Sprint 2 burndown 74
5.32 Sprint 3 burndown 75
5.33 Sprint 4 burndown 76
5.34 Sprint 5 burndown 77
5.35 Sprint 6 burndown 78
5.36 Sprint 7 burndown 79
5.37 Sprint 8 burndown 80
5.38 Sprint 9 burndown 81
5.39 Sprint 10 burndown 82
5.40 Sprint 11 burndown 83
5.41 Sprint 12 burndown 84
5.42 Sprint 13 burndown 85
5.43 Sprint 14 burndown 86
5.44 Sprint 15 burndown 87
5.45 Sprint 16 burndown 88
5.46 Sprint 1 skjermdump 89
5.47 Sprint 2 skjermdump 90
5.48 Sprint 3 skjermdump 91
5.49 Sprint 4 skjermdump 92
5.50 Sprint 5 skjermdump 93
5.51 Sprint 6 skjermdump 94
5.52 Sprint 7 skjermdump 95
5.53 Sprint 8 skjermdump 96
5.54 Sprint 9 skjermdump 97
5.55 Sprint 10 skjermdump 98
5.56 Sprint 11 skjermdump 99

5.57 Sprint 12 skjermdump 100
5.58 Sprint 13 skjermdump 101
5.59 Sprint 14 skjermdump 102
5.60 Sprint 15 skjermdump 103
5.61 Sprint 16 skjermdump 104
6. Timelister 105
6.1 Januar 105
6.1.1 Sammendrag 112
6.2 Februar 113
6.2.1 sammendrag 138
6.3 Mars 139
6.3.1 sammendrag 150
6.4 April 151
6.4.1 sammendrag 172
6.5 Mai 174
6.5.1 sammendrag 188

1. Arbeidskontrakt

1.1 Innledning

Denne arbeidskontrakten bygger på et sett med typiske mål, oppgavefordelinger, prosedyrer og retningslinjer for interaksjoner for studentarbeider. Arbeidskontrakten er utfylt med *egne* fortolkninger av hva man mener med disse og hvordan man skal oppnå dette. Roller og oppgavefordeling

1.2 Dokumentansvarlig/sekretær

Dokumentansvarlig/sekretær har ansvar for å ta møtereferater, screenshots av sprinter, og føre annen relevant dokumentasjon underveis i prosjektet. Denne rollen vil rulleres innad i gruppen på ukentlig basis.

Tomas Klungerbo Olsen tar denne rollen første gang i uke 2, og vil ha denne rollen hver partallsuke.

Lars Ivar Ramberg tar denne rollen første gang i uke 3, og vil ha denne rollen hver oddetalsuke.

1.3 Product Owner

Product Owner er bindeleddet mellom oppdragsgiver og utvikler-teamet. Product Owner er ansvarlig for å representere produktet, og har som mål å fatte beslutninger som kommer produktet til gode.

Product Owner har ofte ansvar for backlog og user stories, men i denne oppgaven vil ansvar for backlog og user stories deles mellom gruppemedlemmene. Product Owner vil derfor i hovedsak ha en kommunikativ rolle mot oppdragsgiver, og være ansvarlig for kommunikasjon.

Lars Ivar Ramberg vil være Product Owner for dette prosjektet.

1.4 Scrum Master

Scrum Master er ansvarlig for å kommunisere mål og retning til de resterende team-medlemmene. Scrum Master har ikke direkte ansvar for kommunikasjon med oppdragsgiver (dette ansvaret faller på Product Owner).

Scrum Master er en “tjenende leder” for teamet. Teamet skal i utgangspunktet være selvstyrende, og Scrum Master skal da ikke lede teamet direkte. Scrum Master skal påse at Scrum rammeverket blir fulgt og respektert.

Tomas Olsen vil være Scrum Master for dette prosjektet.

1.5 Kvalitetssikring

1.5.1 Kode

All kode skal gjennom en "review" før den aksepteres som del av endelig løsning. Rollen som kvalitetssikrer, eller "reviewer" vil tilhøre det gruppemedlemmet som ikke skrev den aktuelle koden. Dette gjøres for å forsikre kvalitet ved at begge gruppemedlemmene ser og godkjenner all kode som skrives.

1.5.2 Dokumentasjon

Kvalitetssikring for dokumenter vil være ansvaret til det gruppemedlemmet som ikke er forfatter av dokumentet.

1.6 Prosedyrer

A) *Scrum og utviklingsmetodikk*
   a) Utvikling skal gjennomføres basert på Scrum metodikk.
   b) Hver sprint vil være en uke lange.
   c) Scrum roller og rolle-fordeling er beskrevet i avsnitt "Roller og oppgavefordeling"
   d) En ny sprint starter med sprint planning hver mandag etter daglig stand-up møte (se punkt B "Møter").
   e) Sprint review avholdes hver søndag etter daglig stand-up møte (se punkt B "Møter").
   f) En sprint avsluttes med sprint retrospective hver søndag etter sprint review.
      i) I sprint retrospective skal det reflekteres over prosessen, ikke produktet. Sprint retrospectiven bør derfor ta for seg:
         (1) Hva gikk bra?
         (2) Hva gikk ikke så bra?
         (3) Hvilke konkrete handlinger kan teamet ta for å forbedre det som ikke gikk bra, og videreføre/opprettholde det som har gått bra.
   g) Issue tracking skal skje i prosjektet sitt Jira-space
      i) Alle oppgaver tilknyttet utvikling skal spores (trackes) i Jira-spacet. Oppgaver skal som hovedregel ikke utføres uten å bli sporet i Jira.
   h) All kode utviklet i prosessen skal samles i en GitHub repository.
   i) Den ansvarlige for GitHub repositoriet skal forsikre seg om at repositoriet er tilgjengelig for alle gruppemedlemmer, også etter at prosjektet er over, i minst et år etter sluttdato.
   j) Dersom det andre gruppemedlemmet ønsker tilgang etter året med tilgjengelighet, må de ta en kopi av repositoriet før tilgjengeligheten avsluttes.
   k) Extreme-Programming metodikk kan implementeres dersom nødvendig.

B) *Møter*
   a) Stand up møter skal gjøres daglig, mandag til fredag og søndag kl 08:00. Disse møtene skjer uten innkalling til faste tider i Microsoft Teams.
   b) Sprint møter skal skje hver uke i form av en sprint review, sprint planning, og sprint retrospective.

c) Møter med veileder og oppdragsgiver skal skje annenhver uke, med start i uke 2, 2022. Disse møtene vil tilsvare en sprint review med demo, der arbeid vises frem til oppdragsgiver og veileder. Videre prosedyrer for innkalling er beskrevet i punkt C.

C) *Møteinnkalling*
   a) Alle møter som ikke er stand up møter skal ha en formell innkalling.
   b) Møteinnkalling skal skje over mail. Mail sendes til alle gruppemedlemmer hver uke. Annenhver uke inviteres også veileder, kontaktperson hos oppdragsgiver, og annet relevant personell hos oppdragsgiver.
   c) Annet relevant personell kan være veiledere eller interessehavere hos oppdragsgiver.
   d) I møteinnkallingen skal det alltid være en lenke til et Microsoft-Teams rom der møtene holdes.
   e) Møteinnkallingen må inneholde tidspunkt for møtet.
   f) Møteinnkalling skal senest sendes ut tre dager før møtet avholdes.

D) *Varsling ved fravær eller andre hendelser*
   a) Dersom man ikke kan møte skal dette meldes om så snart som mulig før møtet. Varsling skal skje over mail, og varslet skal gå ut til alle andre møte-deltakere.
   b) Følgende ansees som gyldige grunner til fravær:
      i) Uforutsett tap av internettforbindelse
         (1) Herunder forutsettes det at gruppemedlemmet tar tiltak for å møte likevel, som for eksempel å bruke mobilnett, eller dra til campus.
      ii) Uforutsette, kritiske tekniske problemer.
      iii) Sykdom
      iv) Ulykke eller alvorlige personskader som hindrer arbeid
      v) Død eller alvorlig sykdom i nære relasjoner
      vi) Dødsfall
   c) Ved fravær uten varsel brukes følgende system for sanksjoner:
      i) Første fravær resulterer i samtale innad i gruppen. Samtalen bør diskutere hvorfor fraværet skjedde, og om det kan gjøres endringer for å unngå flere fravær.
      ii) Andre fravær resulterer i samtale mellom gruppen og veileder. Samtalen bør også her fokusere på å diskutere hvorfor fraværet skjedde, og om noe kan endres for å unngå flere fravær.
      iii) Ved tredje fravær vil det bli iverksatt seperasjon av gruppen.

E) *Dokumenthåndtering*
   a) Alt skal dokumenteres så langt det lar seg gjøre.
   b) Ansvaret for dokumentasjon skal rulleres hver uke (Se seksjon “Roller og Oppgavefordeling”).
   c) Følgende skal alltid dokumenteres:
      i) Møter (møtereferat).
      ii) Beslutninger vedrørende utvikling.
      iii) Sprinter og fremgang, dokumenteres med snapshots underveis.
   d) All dokumentasjon skal så langt det lar seg gjøre skrives og lagres i Confluence. Dokumentasjon som ikke lagres i Confluence skal lagres i en delt Google-drive som alle gruppemedlemmer skal ha tilgang til.
   e) Dokument-ansvarlig har frist til søndag kveld for å fullføre sin dokumentasjon.

F) *Innleveringer av gruppearbeider*

a) Alle innleveringer vedrørende rapport og dokumentasjon direkte knyttet til rapport, skal gjennomleses og godkjennes av alle gruppemedlemmer før innlevering.
b) Alle innleveringer vedrørende rapport og dokumentasjon direkte knyttet til rapport skal levers innen gitte tidsfrister.
c) Gruppearbeider skal være et kollaborativt arbeid der alle gruppemedlemmer deltar i utforming, godkjenning, og innlevering.

G) *Timeregistrering*
a) All tid brukt på prosjektet, og arbeid direkte relatert til prosjektet, skal registreres
b) Registrering foregår i Tempo, en plug-in for Jira.
i) Hver time skal registreres til en issue.
ii) Hvis arbeid gjøres som ikke kan registreres til en spesifik issue, skal det registreres til en generell issue som kan representere. Arbeidet gjort.
iii) For eksempel vil etter-skriving av møtereferater kunne registreres på en generell issue/task ved navn "Referater" eller "Generelt dokumentarbeid".

1.7 Interaksjon

A) *Oppmøte og forberedelse*
a) Alle gruppemedlemmer skal senest stille opp ved angitt oppmøtetidspunkt informert via mail.
i) For stand up møter skal gruppemedlemmene senest stille opp ved tidspunktene spesifisert i denne avtalen.
b) Dersom et gruppemedlem stiller opp etter oppmøtetidspunktet ansees dette som en forsentkomming.
i) Forsentkomminger behandles på lik måte som fravær (Seksjon "Prosedyre", Punkt D).

B) *Tilstedeværelse og engasjement*
a) Passiv underholdning tillates under arbeid. Passiv underholdning defineres som:
i) Musikk
ii) Video og streaming av video.
b) Det er opp til hvert enkelt gruppemedlem å påse at underholdningen ikke distraherer fra arbeidet. Dersom underholdningen blir distraherende, selv om den er passiv, skal underholdningen utebli.
c) Følgende underholdning skal til enhver tid unngås:
i) Dataspill.
ii) Facebook og sosiale medier.
iii) Lesing av materiale ikke relatert til arbeidet (for eksempel nettaviser).
iv) Vilkårlig surfing.
d) Under møter er det forventet at alle gruppemedlemmer deltar aktivt og er engasjerte. Andre aktiviteter som ikke er relatert til møtet eller dokumentasjon av møtet skal unngås.

C) *Hvordan støtte hverandre*
a) Gruppen skal fremme en kultur hvor det er lov å gjøre feil, stille spørsmål, og presentere konstruktiv kritikk.
b) Alminnelig folkeskikk skal utøves til enhver tid. Trakassering og mobbing skal unngås.
i) Alvorlige tilfeller av trakassering ansees som avvik og kan ansees som grunnlag for å separere gruppen.
ii) Ved alvorlige tilfeller skal veileder inkluderes og gruppen skal prøve å løse uenigheter.

iii) Dersom uenighetene ikke kan løses, selv etter møte mellom gruppemedlemmer og veileder, vil det iverksettes seperasjon av gruppen.

c) Alle ideer skal høres og behandles med respekt.
   i) Ideer skal være åpen for kritikk, men kritikken skal være saklig og konstruktiv.

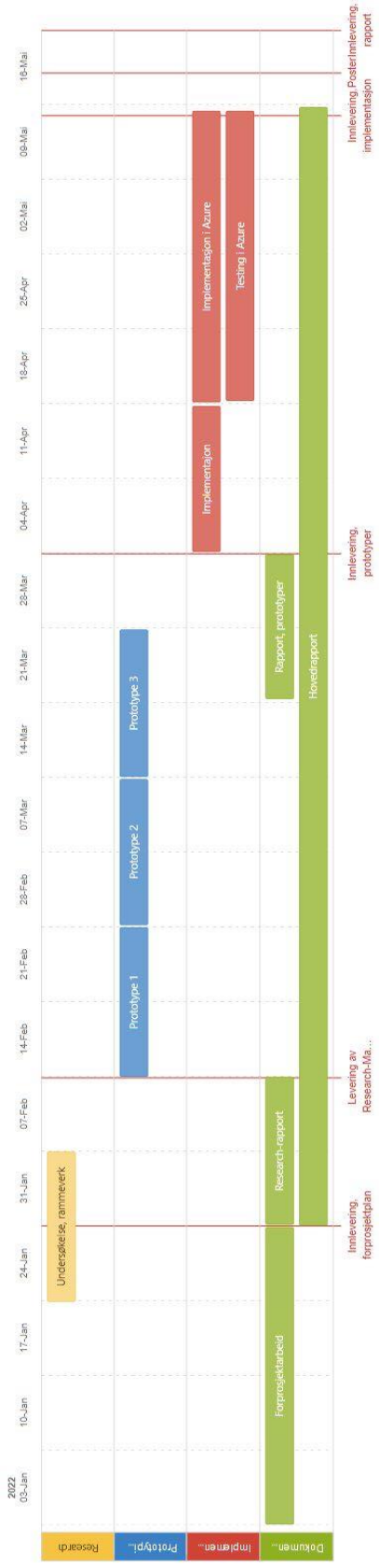
D) *Uenighet, avtalebrudd*

a) Uenighet skal så langt det lar seg gjøre løses ved samtaler innad i gruppen.
   i) Veileder kan involveres dersom uenighetene ikke lar seg løse innad i gruppen.
   ii) Dersom uenigheten fortsatt ikke lar seg løse, vil et siste alternativ være å splitte gruppen. Dette skal unngås så langt som mulig.

b) Relevante avvik vil også være fravær. Fravær diskuteres og avklares i avsnitt “Prosedyrer” (Punkt D) av denne avtalen.

2. Framdriftsplan

2.1 Jira timeline



2.2 Milestones (original)

What	Description	When
Research	Research relevant technologies and frameworks that exists today that can enable world wide distributed streaming of data to a Cloud storage repository. 1. Learn AutoStore use case. What kind of data, location of data, data production and consumers. 2. List most relevant frameworks for data streaming for AutoStore application. 3. Benefits and disadvantages of various frameworks. 4. Benefits and challenges wrt to centralization or decentralization of data storage. 5. Recommendation and selection of framework(s) for further development.	2 weeks
Reporting	Document all findings in above task. Start thesis report. Finish research section above and hand over for review to AutoStore.	1 week 1st delivery to AutoStore: Week 6 - 2022
Implementation	Prototype and test setup with framework 1.	2 weeks Sprint review with AutoStore
Implementation	Prototype and test setup with framework 2.	2 weeks Sprint review with AutoStore
Implementation	Prototype and test setup with framework 3.	2 weeks Sprint review with AutoStore
Reporting	Document all finding in above implementation tasks. Start thesis report. Finish research section above and hand over for review to AutoStore.	1 week 2nd delivery to AutoStore: Week 13-2022
Implementation	Selection of most relevant framework. More in depth implementation, testing and validation.	1 week

Implementation	Testing in Azure. Cloud architecture and frameworks available for data consumption. Configuration, implementation and test of cloud consumer and multi-region clients. (Students should use their own Azure accounts, but expenses not covered by university can be reimbursed)	2 weeks Sprint review with AutoStore
Reporting	Finalize report. Complete thesis work.	2 weeks 3rd delivery to AutoStore: Week 19 - 2022
	SUM	**15 weeks**

2.3 Milestones (revised)

What	Description	When
Implementation	Completion of Pulsar prototype (Framework 2)	Weeks 11 – 12
Implementation	Completion of Flink Prototype (Framework 3)	Week 13
Testing	Testing and comparison between frameworks	Week 14
Reporting	Document all finding in above implementation tasks. Start thesis report. Finish research section above and hand over for review to AutoStore.	Week 15 2nd delivery to AutoStore
Implementation	Selection of most relevant framework. More in depth implementation, testing and validation.	Week 16
Implementation	Testing in Azure. Cloud architecture and frameworks available for data consumption. Configuration, implementation and test of cloud consumer and multi-region clients. (Students should use their own Azure accounts, but expenses not covered by university can be reimbursed)	Weeks 17 - 18
Reporting	Finalize report, complete thesis work.	Week 19 3rd and final delivery to AutoStore

3. Møteinnkallinger

3.1 Meeting 1

Fri 14/01/2022 11:30 - 12:30

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hello all,

This is the first meeting to officially start the work with the bachelor's project related to data streaming for AutoStore AS.

Agenda:

- Explanation and discussion of assignment
- Laying out the work process, what can be expected from us (students)
- Presentation of general timeline
- Contracts, hopefully signing of relevant NDA and Agreement between AutoStore, NTNU, and us (the students)
- Decide content of first 2-week sprint

Please let me know if the time is not suitable for any of you.

MVH.

-Lars Ivar Ramberg and Tomas Klungerbo Olsen

3.2 Meeting 2

Fri 28/01/2022 11:00 - 12:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei, alle!

Vi inviterer herved til 14-dagers møte nummer to!

Agenda:

- Gjennomgang av fremgang
- Presentasjon av hva som har blitt oppnådd så langt
- Planlegging av veien videre
- Diskusjon rundt nåværende research-funn

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.3 Meeting 3

Fri 11/02/2022 11:00 - 12:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei, alle!

Inviterer herved til 14-dagers møte nummer tre!

Agenda:

- Presentasjon av fremgang
- Research
- Kode
- Diskusjon rundt veien videre

Vel møtt! Si gjerne ifra hvis tidspunktet ikke passer

3.4 Meeting 4

Fri 25/02/2022 11:00 - 12:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei, alle!

Vi inviterer herved til 14-dagers møte nummer fire!

Agenda:

- Presentasjon av fremgang med første prototype
- Planlegging av vegen videre
- Diskusjon rundt test krav for løsningene
- Annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.5 Meeting 5

Fri 11/03/2022 11:00 - 12:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei, alle!

Vi inviterer herved til 14-dagers møte nummer 5.

Agenda:

- Presentasjon av fremgang
- Diskusjon av tidsbruk de neste ukene (kollisjon med eksamen)
- Annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.6 Meeting 6.1

Fri 25/03/2022 11:00 - 11:30

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei alle,

Beklager noe sen møteinnkalling denne uken!

Ukentlig møte nummer 6, agenda:

- Presentasjon av ny foreslått milepælsplan
- Diskusjon rundt milepælsplan, justering etter behov fra oppdragsgiver
- Annet

Vedlagt ligger ny foreslått milepælsplan.

Vel møtt!

MVH.

-Lars Ivar Ramberg

3.7 Meeting 6.2

Mon 28/03/2022 11:00 - 12:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei, Alle!

Inviterer til møte imorgen angående bachelor-prosjektet.

Agenda:

- Presentasjon av milepælsplan
- Diskusjon rundt plan, evt hvilke endringer må til for en tilfredsstillende plan
- Fremvisning av pulsar prototype
- Diskusjoner rundt funn gjort av gruppen under implementasjon av Pulsar.
- Annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.8 Meeting 7

Fri 08/04/2022 11:00 - 12:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei alle!

Velkommen til møte nummer 7!

Agenda:

- Test-fremgang fram til nå
- Resultater
- Vegen videre basert på test-resultater
- Annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.9 Meeting 8.1

Wed 20/04/2022 23:00 - 23:30

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei alle!

Velkommen til møte nummer 8!

Agenda:

- Resultater fra testing
- Valg av rammeverk for videre implementasjon
- Diskusjon rundt Azure-biten. Hvordan skal det gjennomføres?
- Annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.10 Meeting 8.2

Mon 25/04/2022 14:30 - 15:00

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei alle!

Etter samtale med Asle tidligere i dag inviteres dere herved til et nytt møte som vil gjennomgå det vi planla å snakke om i dag (fredag 22.04).

Agenda:

- Resultater fra testing
- Valg av rammeverk for videre implementasjon
- Diskusjon rundt Azure-biten. Hvordan skal det gjennomføres?
- Annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

3.11 Meeting 9

Fri 06/05/2022 11:00 - 11:30

Microsoft Teams-møte; Teams meeting

Lars Ivar Ramberg, Tomas Klungerbo Olsen, Saleh Abdel-Afou Alaliyat, Asle Olsen Gaasø

Hei alle!

Inviterer herved til siste møte for IDATA2900 prosjektet «Tjeneste for datastrømming»

Agenda:

- Presentasjon av fremgang fram til nå, spesielt fokus på Azure
- Avklaring rundt siste innleveringer til AutoStore (Hvor, hvordan, format)
- Avgrensning av siste utviklings-fase.
- Hva kan realistisk klargjøres før 20. Mai
- Hva må gjøres i ettertid
- Eventuelt annet

Vel møtt!

MVH.

-Lars Ivar Ramberg og Tomas Klungerbo Olsen

4. Møtereferater

4.1 Meeting 1, Initial meeting

Date

14 Jan 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- Asle Olsen Gaasø
- saleh alaliyat

Goals

- Self introductions
- Explanation of assignment with requirements.

Discussion items

Time	Item	Who	Notes
10min	Self introducitons	Lars Ivar Ramberg Tomas Klungerbo Olsen Asle Olsen Gaasø saleh alaliyat	
20min	Explanation of assignment	Lars Ivar Ramberg Asle Olsen Gaasø	• Lars explains the information given to us students regarding the assignment • Asle further explains the assignment with its expected goals throughout the process by sharing a view of his Confluence page on the project. • Asle explains that the system should be scalable for further expansion. • Asle wants the students to use their own private Azure account due to security and efficiency. • Asle explains that expenses required for the project will be covered by AutoStore as long as there are no surprises. • Asle brings up that NDAs have to be signed. • Lars mentions other contracts that also has to be signed and

			that these contracts will be sent via email. • Lars explains that the students wants to use Scrum with 1 week sprints and a meeting every 2nd week with Asle or an AutoStore representative for guidence.

Action items

- Sign and send contracts.

4.2 Meeting 2, Sprint 1-2 Demo Session

Microsoft Teams-møte; Teams meeting

Date

28 Jan 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- Asle Olsen Gaasø
- saleh alaliyat

Goals

- Present the current state of the project to the stakeholder and counselor.
- Receive feedback and direction guidance.

Discussion items

Time	Item	Who	Notes
5min	Present documentation	Lars Ivar Ramberg	• Diagram of system implementation is presented. • Asle confirms the diagram is correct and fits the problem domain.

10min	Framework research	Lars Ivar Ramberg
		
		Asle Olsen Gaasø
			• Apache Spark as a framework is brought up.
			• Current solution uses Databricks which is Spark as a service.
			• Streaming is possible in Spark.
			• Additional frameworks of interest:
			  ○ Kafka
			  ○ Pulsar
			  ○ RabbitMQ

5min	Further sprints	Lars Ivar Ramberg	• Next sprint will be focused on framework research and a report of the findings. • The sprint after the research sprint will be a prototype of the framework we find most fitting.
5min	Collaboration tools issues	saleh alaliyat	• Unable to access the Confluence space of the project.
5min	Pre project plan address list	Lars Ivar Ramberg	• Need everyone's address and email for documentation purposes.

Action items

- Tomas Klungerbo Olsen Lars Ivar Ramberg Research Kafka, Pulsar, and RabbitMQ as possible streaming frameworks.

4.3 Meeting 3, Sprint 3-4 Demo Session

Microsoft Teams-møte; Teams meeting

Date

11 Feb 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- Asle Olsen Gaasø

Goals

- Present the work done during sprint 3 and 4 to the stakeholder.
- Discuss the current direction of the project.

Discussion items

Time	Item	Who	Notes
5min	Frameworks research report	Asle Olsen Gaasø Lars Ivar Ramberg	• Asle is satisfied with the report and how it is written. • The next sprints is planned to be a Kafka prototype, then a Pulsar prototype, followed by a Flink prototype.
10min	Kafka framework	Asle Olsen Gaasø Tomas Klungerbo Olsen	• Asle asks how Kafka works during network disconnection. • A buffer could be implemented if not supported by default. • Should figure out if Kafka has buffers by default.
10min	External demands	Lars Ivar Ramberg Asle Olsen Gaasø	• The cource INGA2300 is very demanding and effects the progress for this project. • There might be a delay for planned deliverables. • Asle will be notified on delays.
5min	Docker containers	Lars Ivar Ramberg	• Docker will be used to create containers in order to simulate the system • Might be able to borrow virtual machines from NTNU's servers.

Action items

- Tomas Klungerbo Olsen Lars Ivar Ramberg Figure out what happens with data sent to Kafka during a network disconnect.

- Lars Ivar Ramberg Find out if NTNU still has virtual machines available for students.

4.4 Meeting 4, Sprint 5-6 Demo Session

Microsoft Teams-møte; Teams meeting

Date

25 Feb 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- Asle Olsen Gaasø
- saleh alaliyat

Goals

- Present the work done during sprint 5 and 6 to the stakeholder (Kafka prototype).
- Discuss the current direction of the project.

Discussion items

Time	Item	Who	Notes
18 min	Demo of Kafka prototype	Asle Olsen Gaasø Lars Ivar Ramberg Tomas Klungerbo Olsen saleh alaliyat	• Docker is good for testing and development, but might be difficult for the employer to use as their final solution. • Supervisor suggests that a flow diagram of how the system works should be made
4 min	Next sprint	Asle Olsen Gaasø Lars Ivar Ramberg Tomas Klungerbo Olsen	• Focuses on Pulsar and some small fixes to the Kafka prototype for completion

Action items

- Tomas Klungerbo Olsen Lars Ivar Ramberg Create a flow diagram for the Kafka prototype architecture

4.5 Meeting 5, Sprint 7-8 Demo Session

Microsoft Teams-møte; Teams meeting

Date

11 Mar 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- Asle Olsen Gaasø

Goals

- Present the work done during sprint 7 and 8 to the stakeholder.
- Discuss the current direction of the project.

Discussion items

Time	Item	Who	Notes
6 min	Pulsar framework	Asle Olsen Gaasø Lars Ivar Ramberg	• Completed the producer and consumer for the Pulsar prototype • Was unable to complete the broker due to lack of time (INGA2300 group project delivery and exam shortly) • Plan to make a new milestones to accommodate for development progress
4 min	AutoStore requirements	Asle Olsen Gaasø Lars Ivar Ramberg Tomas Klungerbo Olsen	• Discussed how the development team felt about Pulsar versus Kafka so far • Should batch about 30 seconds of data before sending common events from the client • Should send critical information instantly from the client
2 min	Comparing Pulsar and Kafka	Lars Ivar Ramberg Asle Olsen Gaasø Tomas Klungerbo Olsen	• The development team has not experienced significant differences as of today • Kafka could be a bit faster, although it's hard to confirm without properer testing

3 min	AutoStore architecture	Asle Olsen Gaasø	• The development team could investigate clusters • Investigate a single entry-point versus an entry-point per country that relays to a main server
5 min	Future plans	Lars Ivar Ramberg Tomas Klungerbo Olsen Asle Olsen Gaasø	• Planning a comparison test between the prototypes in a real-world case simulation using one of NTNU's servers • Create new milestones • Stakeholder understands that INGA2300 has to be prioritized the following two weeks

Action items

- Tomas Klungerbo Olsen Lars Ivar Ramberg Create new milestones to accommodate for current progress
- Tomas Klungerbo Olsen Lars Ivar Ramberg Perform a comparison test between the framework prototypes in a real-world case simulation

4.6 Meeting 6.1, Sprint 9-10 Demo Session

Microsoft Teams-møte; Teams meeting

Date

25 Mar 2022

Attendees

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen
- saleh alaliyat

Goals

- Present new milestone plan

Discussion items

Time	Item	Who	Notes
8 min	Current state	Tomas Klungerbo Olsen Lars Ivar Ramberg saleh alaliyat	• Need to dedicate more time for thesis writing
20 min	Milestone plan	Tomas Klungerbo Olsen Lars Ivar Ramberg saleh alaliyat	• The development team confirms that they will work during Easter holidays

Action items

- Lars Ivar Ramberg will create a new meeting invitation for Monday 28/03/2022

4.7 Meeting 6.2, Sprint 9-10 Demo Session

Microsoft Teams-møte; Teams meeting

Date

28 Mar 2022

Attendees

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen
- Asle Olsen Gaasø

Goals

- Present demo of Pulsar prototype to employer
- Present new milestone plan to employer

Discussion items

Time	Item	Who	Notes
8 min	New milestone plan	Tomas Klungerbo Olsen Lars Ivar Ramberg Asle Olsen Gaasø	• Asle approves the new milestone plan
30 min	Demo of Pulsar prototype	Tomas Klungerbo Olsen Lars Ivar Ramberg Asle Olsen Gaasø	• Discussed the state of completion for the prototype • ○ Agreed to fix the current broker selection bug ○ Cluster solution is to be postponed until the final framework has been chosen

Action items

- Tomas Klungerbo Olsen and Lars Ivar Rambergwill fix the broker selection bug

4.8 Meeting 7, Sprint 11-12 Demo Session

Microsoft Teams-møte; Teams meeting

Date

08 Apr 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- saleh alaliyat
- Asle Olsen Gaasø

Goals

- Present demo of testing to employer

Discussion items

Time	Item	Who	Notes
2 min	Illness	Lars Ivar Ramberg	• Lars Ivar was sick during sprint 11. • Lars Ivar was the only one with access to the test server.
10 min	Testing on NTNU's server	Lars Ivar Ramberg Tomas Klungerbo Olsen Asle Olsen Gaasø	• Asle Olsen Gaasø can acquire more information in regards to how much data AutoStore sends per hour. • 20 000 messages per second was sent successfully by the development team during testing.
4 min	Whats next	Lars Ivar Ramberg Tomas Klungerbo Olsen saleh alaliyat Asle Olsen Gaasø	• More testing. • Create a testing report.

Action items

- Lars Ivar Ramberg Tomas Klungerbo Olsen Do more testing and write a test report

4.9 Meeting 8.1, Sprint 13-14 Demo Session

Microsoft Teams-møte; Teams meeting

Date

22 Apr 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- saleh alaliyat

Goals

- Discuss results from testing
- Choice of framework and further implementation
- Discuss the Azure implementation

Discussion items

Time	Item	Who	Notes
5 min	Thesis structure and other tips	saleh alaliyat	• Can use a Venn diagram to visualize subject area overlap.
5 min	Testing documentation	Lars Ivar Ramberg	• Testing and the testing documentation is complete and delivered to the stakeholder.
2 min	Current state	Lars Ivar Ramberg	• Data is yet to be encrypted.
2 min	Milestone plan	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Still on track.
5 min	Further work	Tomas Klungerbo Olsen Lars Ivar Ramberg	• Work on encryption. • Contact Asle for a new demo session meeting.

Action items

- Lars Ivar Ramberg will invite Asle to a new demo session meeting.

4.10 Meeting 8.2, Sprint 13-14 Demo Session

Microsoft Teams-møte; Teams meeting

Date

25 Apr 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- Asle Olsen Gaasø

Goals

- Discuss results from testing
- Choice of framework and further implementation
- Discuss the Azure implementation

Discussion items

Time	Item	Who	Notes
3 min	Choice of framework.	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Pulsar scored best during the testing stage and was chosen as the framework for the main implementation.
5 min	Optional batching	Tomas Klungerbo OlsenAsle Olsen Gaasø	• Optional batching is not desired.
4 min	Compression	Tomas Klungerbo Olsen Lars Ivar Ramberg Asle Olsen Gaasø	• No need for compression as the data used by AutoStore is already compressed.
2 min	Milestone plan	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Still on track.

10 min	Testing documentaion	Tomas Klungerbo Olsen Lars Ivar Ramberg Asle Olsen Gaasø	• Stakeholder is pleased with the testing documentation even though there were some grammatical issues that should be fixed.

Action items

- Lars Ivar Ramberg and Tomas Klungerbo Olsen will fix the testing documentation for grammar issues before it gets added to the thesis

4.11 Meeting 9, Sprint 15-16 Demo Session

Microsoft Teams-møte; Teams meeting

Date

06 May 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg
- saleh alaliyat
- Asle Olsen Gaasø

Goals

- Pulsar in Azure
- How to deliver the product to AutoStore
- Specifying boundaries for last sprint
    - What can be done before 20 May
    - What needs to be done after

Discussion items

Time	Item	Who	Notes
7 min	Pulsar cluster and standalone solution	Lars Ivar Ramberg Tomas Klungerbo Olsen Asle Olsen Gaasø	• Working standalone solution. • Issues with cluster (contacted customer service). • AutoStore is interested in analysis services through Azure and wants the development team to investigate.
3 min	Next week	Lars Ivar Ramberg	• Minimal amount of time dedicated for implementation
3 min	Milestone plan	Tomas Klungerbo Olsen Lars Ivar Ramberg Asle Olsen Gaasø	• Milestone plan on track. • Can deliver paragraphs of text to AutoStore in order to make sure that the text does not break the NDA.

4 min	Milestone plan	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Still on track.
4 min	Sending data as byte arrays	Tomas Klungerbo Olsen Asle Olsen Gaasø	• Continue to send (and deliver the final product) with strings in mind.
2 min	Documentation	saleh alaliyat	• The code should be well documented and structured.

Action items

- Lars Ivar Ramberg and Tomas Klungerbo Olsen will investigate analysis services through Azure.
- Lars Ivar Ramberg and Tomas Klungerbo Olsen will make sure the code is well documented and structured.

5. Sprint reports

5.1 Sprint 1 Review

Date

24 Jan 2022

Participants

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen

Goals

- Sprint review of Sprint 1

Agenda

Time	Element	Who	Notes

10 min	Completed tasks	Lars Ivar Ramberg
		
		Lars Ivar Ramberg
			• Good progress, although sprint did not complete.
			• Outstanding tasks depend on external personell.
			• Remaining tasks are waiting for external personell.
			• No story could be 100% completed this week, as all stories had minor tasks missing. Because of this, no story points were satisfied.
			  ○ The problem above is endemic of the way the group has chosen to organize their tasks with epic → stories → tasks. If one task fails to complete, no story points will be satisfied, as story points are tied to tasks.
			  ○ Also, some tasks were formulated in such a way that they required external personell to act in order to complete. This should be avoided when possible.
			• Meeting had no show and tell since both team members have been working on the same tasks.

15 min	Remaining	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Signature, three party agreement. • Response from administrator at NTNU regaring Jira.

Action Points

- Carry over unresolved stories to next sprint

5.2 Sprint 2 Review

Date

30 Jan 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Demonstrate progress on issues during the second sprint

Discussion items

Time	Item	Who	Notes
20min	Jira and research	Tomas Klungerbo Olsen	• Made Jira Workflow more strict • Mainly focused research on Kafka • Compared Kafka to RabbitMQ and Pulsar
25min	Research and overleaf	Lars Ivar Ramberg	• Researched multiple frameworks. • Created an Overleaf document template for the thesis.
60min	Discussing Overleaf improvements	Tomas Klungerbo Olsen Lars Ivar Ramberg	

5.3 Sprint 3 Review

Date

30 Jan 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Demonstrate progress on issues during the second sprint

Discussion items

Time	Item	Who	Notes
10min	Research	Tomas Klungerbo Olsen	• Researced RabbitMQ, Kafka, Pulsar • Wrote and edited research/findings report • Concluded that Kafka s
10min	Research	Lars Ivar Ramberg	• Researched Flink, Spark, • Wrote and edited research/findings report • Concluded that Flink seems most viable out of the technologies
10min	Discussion about Frameworks	Lars Ivar Ramberg Tomas Klungerbo Olsen	• In the research-report, Lars Ivar Ramberg and Tomas Klungerbo Olsen agreed to use Kafka, Pulsar, and combine the most viable with Flink.

Action Points

- Lars Ivar Ramberg sends the report in PDF form to stakeholder
- Tomas Klungerbo Olsen and Lars Ivar Ramberg will start implementation and programming next sprint

5.4 Sprint 4 review

Date

13 Feb 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Present a demo of work done during this sprint

Discussion items

Time	Item	Who	Notes
55 min	Tomas' demo	Tomas Klungerbo Olsen	• Created a Kafka Producer with the Java API. • Started working on a data generator for simulation. • Looked into a client-server library for Java called netty.
42 min	Lars' demo	Lars Ivar Ramberg	• Created a Kafka Consumer with the Java API. • Started working on a Spark solution for the consumer.

Action items

- Tomas Klungerbo Olsen Implement a server-client with netty to generate data for the Kafka Producer.
- Tomas Klungerbo Olsen Finalize Java Producer
- Lars Ivar Ramberg Do more research into a Spark solution.
- Lars Ivar Ramberg Finalize Java Consumer

5.5 Sprint 5 review

Date

20 Feb 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Present a demo of work done during this sprint

Discussion items

Time	Item	Who	Notes
8 min	General News	Tomas Klungerbo Olsen Lars Ivar Ramberg	▪ New blueprints (mal) for bachelor's thesis and related documents
2 min	Lars' demo	Lars Ivar Ramberg	• No coding to show, mianly work in Overleaf. • Planning to contact Sondre at AutoStore for further guidance
28 min	Tomas' demo	Tomas Klungerbo Olsen	▪ DataProducer moved to util. DataProducer is implementation-agnostic, and is to be implementable as dependency. ▪ Dataproducer uses lorem-packages to generate data ▪ Changes to docker image, uses less space and no Maven wrappers

Action items

- Lars Ivar Ramberg Will contact Sondre at AutoStore
- Lars Ivar Ramberg Will read all the new blueprints
- Tomas Klungerbo Olsen Will read all the new blueprints
- Lars Ivar Ramberg Will ask AutoStore about interest in Docker files and possible optimizations
- Tomas Klungerbo Olsen Will ask AutoStore about interest in Docker files and possible optimizations

5.6 Sprint 6 review

Date

28 Feb 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Present a demo of work done during this sprint.

Discussion items

Time	Item	Who	Notes
8 min	Consumer	Lars Ivar Ramberg	▪ Consumer is working. ▪ Can be shut down by issuing command to port and IP.
7 min	Producer	Tomas Klungerbo Olsen	• Producer is working. • Can be shut down by issuing command to port and IP.
2 min	JavaDoc	Tomas Klungerbo Olsen	• Was unable to finish the issue, but is close. • Have a backup solution in case the issue takes too much time.
4 min	System architecture changes	Tomas Klungerbo Olsen	▪ Moved repositories to organization. ▪ Need to move the remaining repositories to the same organization. ▪ Should shorten the names of the repositories by excluding the prefix "streams" from repositories.

Action items

- Tomas Klungerbo Olsen Will move the remaining repositories to the new organization on GitHub.
- Tomas Klungerbo Olsen Will rename repositories for simpler repository names.
- Tomas Klungerbo Olsen Will try to fix the JavaDoc GitHub Actions deployment or use a backup solution.
- Lars Ivar Ramberg Will look into improving the streams shutdown script.

5.7 Sprint 7 review

Date

07 Mar 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Present a demo of work done during this sprint.

Discussion items

Time	Item	Who	Notes
10min	Consumer	Lars Ivar Ramberg	▪ Implemented consumer ▪ Some concerns regarding re-use of code ▪ ready to be tested against broker
10min	Producer	Tomas Klungerbo Olsen	▪ Implemented producer ▪ Some room for implementing utils ▪ Ready to be tested against broker
7min	Javadoc	Tomas Klungerbo Olsen	▪ Automatic JavaDoc has been implemented ▪ Change was made to implemented source code as well, Tomas Klungerbo Olsen is now a contributor for that project

Action items

- Lars Ivar Ramberg Will do some small hotfixes to the consumer
- Lars Ivar Ramberg Will investigate and possibly implement a general solution for loading properties across projects
- Tomas Klungerbo Olsen Will fix broken shields on project pages
- Tomas Klungerbo Olsen Will add shield to main readme file
- Lars Ivar Ramberg and Tomas Klungerbo Olsen will implement broker

5.8 Sprint 8 review

Date

14 Mar 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Present a demo of work done during this sprint.

Discussion items

Time	Item	Who	Notes
7 min	Milestones	Lars Ivar Ramberg Tomas Klungerbo Olsen	▪ Reflect on milestones
3 min	Shutdown script	Tomas Klungerbo Olsen	• Presents the new shutdown script

Action items

- Lars Ivar Ramberg Send milestone plan to AutoStore for approval.
- Lars Ivar Ramberg Fix bug where Pulsar consumer is not shutting down properly.

5.9 Sprint 9 review

Date

24 Mar 2022

Attendees

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen

Goals

- Review changes

Discussion items

Time	Item	Who	Notes
2 min	Progress halted due to exams	Tomas Klungerbo Olsen Lars Ivar Ramberg	• Due to an exam on the 23rd of March, there has been little progress this week
2 min	Send milestone plan	Tomas Klungerbo Olsen Lars Ivar Ramberg	• Updated milestone plan has been sent out to saleh alaliyat and AutoStore • This plan will be discussed, and if necessary changed, during the next bi-weekly meeting

Action items

- Tomas Klungerbo Olsen and Lars Ivar Ramberg will discuss the new milestone plan with saleh alaliyat and Asle

5.10 Sprint 10 review

Date

28 Mar 2022

Attendees

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen

Goals

- Review of sprint 10

Discussion items

Time	Item	Who	Notes
10 min	Broker demo	Tomas Klungerbo Olsen Lars Ivar Ramberg	• Broker demo is working as expected
1 min	License	Tomas Klungerbo Olsen Lars Ivar Ramberg	• Chose MIT license

Action items

- Tomas Klungerbo Olsen and Lars Ivar Ramberg Start implementation of Flink prototype next sprint

5.11 Sprint 14 review

Date

25 Apr 2022

Attendees

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen

Goals

- Review of sprint 14

Discussion items

Time	Item	Who	Notes
10 min	Improved Consumer properties loading	Lars Ivar Ramberg	• Should be implemented for the Producer as well if time is available
10 min	Batching support	Tomas Klungerbo Olsen	• Can now use both streaming and batching by utilizing two instances of the application with different ports.

Action items

- Tomas Klungerbo Olsen and Lars Ivar Ramberg implement improved properties loading for Producer if time is available

5.12 Sprint 15 Review

Date

02 May 2022

Attendees

- Lars Ivar Ramberg
- Tomas Klungerbo Olsen

Discussion items

Time	Item	Who	Notes
10min	Terraform script	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Terraform script written. Can make VMs in Azure through Terraform. • Script needs more work to create enough VMs for a pulsar broker system
5min	Azure account with credits	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Azure account created with 200$ credit • Registered to Lars Ivar Ramberg as Tomas Klungerbo Olsen has already made an account and lost the credit • Credits will be forfeit in 30 days • Expenditure can be recompensated by AutoStore as per agreement, but high spending should be avoided
10min	Byte arrays	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Consumer and Producer have been changed to use byte arrays. Changes have not been merged • Data receiver needs more work to work with byte arrays due to how Netty works • Complicated issue, needs separate story

Action items

- Tomas Klungerbo Olsen and Lars Ivar Ramberg will continue work on Terraform script
- Tomas Klungerbo Olsen and Lars Ivar Ramberg will monitor Azure usage
- Tomas Klungerbo Olsen and Lars Ivar Ramberg will look further into the byte array issue

5.13 Sprint 16 Review

Date

11 May 2022

Attendees

- Tomas Klungerbo Olsen
- Lars Ivar Ramberg

Goals

- Review the last sprint

Discussion items

Time	Item	Who	Notes
10 min	Code cleanup	Lars Ivar Ramberg Tomas Klungerbo Olsen	• Code is refactored and commented properly.
5 min	Example	Tomas Klungerbo Olsen	• Added example directory for Pulsar implementation for local testing with Docker Compose.
5 min	TLS transport	Tomas Klungerbo OlsenLars Ivar Ramberg	• Dropped due to difficulties. • More time needed. • Should be prioritized in further work.
5 min	Cloud	Tomas Klungerbo Olsen Lars Ivar Ramberg	• Standalone solution working • Difficulties with cluster (client does not require a cluster, but it would be nice for horizontal scaling in the future)

Action items

- Lars Ivar Ramberg and Tomas Klungerbo Olsen have completed the last implementation sprint and will focus 100% on thesis writing.

5.14 Sprint 1 Retrospective

Date	**24 Jan 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What went well?

- Equally split workload
- Good communication. Stand ups everyday are very helpful.

What can be done better?

- Tasks may need to be segregated so that not too many tasks are tied to a story, preventing it from completion. This week, no stories were completed because they were tied to tasks that were not completed on time.
- Time-tracking issues must be in place so all hours can be logged. As of now, hours are spread accross Jira, Toggl, and Excel as a result of lacking support for "general" time-tracking (meetings, writing e-mails, etc.)
- Some times/appointments need to be adjusted to account for INGA2300. As of right now, planning on mondays conflicts with lectures on mondays.

Actions

- Define new time slots for meetings
- Finish setting up time tracking issues in Jira

5.15 Sprint 2 Retrospective

Date	**30 Jan 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- Team was flexible and had good communication throughout the sprint.
- Sprint was better planned regarding complexity per developer.

What should we have done better?

- *Remember to upload resources to Google Drive as fast as possible.*
- *When sharing access to frameworks e.g. Overleaf, the sharer should inform the other participants on which account it was shared to.*
- *Keep better track of Jira issue board to reflect the current state of the project.*

5.16 Sprint 3 Retrospective

Date	**06 Feb 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What went well?

- Good cooperation in order to finish tasks
- Good communication and transperancy with daily stand-ups
- We finished 100% of sprint tasks, despite a busy week

What should have been done better?

- Work could have been done on more days of the week

5.17 Sprint 4 Retrospective

Date	**13 Feb 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- *Maintained standups*
- *Shared knowledge for improved efficiency*

What should we have done better?

- *This sprint was too big in terms of complexity*
- *External demands had too much impact on this sprint (Especially the course INGA2300).*

Actions

- Reduce complexity of next sprint to accommodate for INGA2300

5.18 Sprint 5 retrospective

Dato	**20 Feb 2022**
Deltakere	Lars Ivar Ramberg Tomas Klungerbo Olsen

What should we have done better?

- Issues are too big and cover too many topics

Actions

- Lars Ivar Ramberg and Tomas Klungerbo Olsen have agreed to not pick new issues when there are issues in review. Follow this up.
- Leftover issues must be completed this week.
- Lars Ivar Ramberg Will inform Asle about the delay

5.19 Sprint 6 Retrospective

Date	**28 Feb 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- *Taking advantage of pair programming to manage complex/unknown solutions.*
- *Good communication with counselor and stakeholder.*
- *Good communication within the development team.*

What should we have done better?

- *Should find a compromise for pair programming work hours.*
- *Should write more in the report.*

Actions

- Find hours during the day in which both developers can work as a pair.

5.20 Sprint 7 Retrospective

Date	**07 Mar 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What did we do well?

- *Started to catch up on tasks in relation to the milestone plan*
- *Well structured project is paying off, leading to more effective development*
- *Code from last prototype has been effectively reused*

What should we have done better?

- *Most of the work is done at the end of the week as a result of other obligations*
- *Little writing of report*

Actions

- Tomas Klungerbo Olsen and Lars Ivar Ramberg will dedicate a day to work on the report together

5.21 Sprint 8 Retrospective

Date	**14 Mar 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- *Quick and efficient review of issues.*

What should we have done better?

- *Better planning to accommodate for INGA2300 (remove issues from sprint)*

Actions

- Lars Ivar Ramberg Remove issues from the next sprint due to INGA2300 exam and delivery

5.22 Sprint 9 Retrospective

Date	**24 Mar 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What did we do well?

- Accurately predicted lack of time for work

What should we have done better?

- Sprint was closed late
- Less communication than usual

Actions

- Tomas Klungerbo Olsen and Lars Ivar Ramberg will carry over issues from Sprint 9 to Sprint 10

5.23 Sprint 10 Retrospective

Date	**28 Mar 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- *Finished on time*
- *Well balanced work load*

What should we have done better?

- *Missed some stand-up meetings*

Actions

- Tomas Klungerbo Olsen and Lars Ivar Ramberg Go back to stand-ups as usual

5.24 Sprint 11 Retrospective

Date	**04 Apr 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What did we do well?

- Good Communication
- In theory, good distribution of work

What should we have done better?

- Little progress due to sickness, high "bus-factor"
- Stakeholder could have been informed of delay due to sickness sooner

Actions

- Tomas Klungerbo Olsen and Lars Ivar Ramberg will carry over all the tasks from this sprint to the next sprint

5.25 Sprint 12 Retrospective

Date	**10 Apr 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- *Good portioning of work.*
- *Re-introduced daily stand-up.*

What should we have done better?

- Should be more prepared for stakeholder meetings (demo)

Actions

- Tomas Klungerbo Olsen Lars Ivar Ramberg Prepare demo for next stakeholder meeting

5.26 Sprint 13 Retrospective

Date	**18 Apr 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What did we do well?

- Higher perceived efficiency
- Low response time from group members

What should we have done better?

- There should be greater discussion regarding what issues are necessary

Actions

- Lars Ivar Ramberg and Tomas Klungerbo Olsen will prune the backlog of unnecessary issues

5.27 Sprint 14 Retrospective

Date	**25 Apr 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What did we do well?

- More equal split of time between development and thesis writing
- More prepared for demo session

What should we have done better?

- More use of external advisors

Actions

- Lars Ivar Ramberg and Tomas Klungerbo Olsen will contact external advisors for guidance regarding thesis writing and implementation

5.28 Sprint 15 Retrospective

Date	**02 May 2022**
Participants	Lars Ivar Ramberg Tomas Klungerbo Olsen

What did we do well?

- Prioritization, focus on important and relevant tasks
- Good communication

What should we have done better?

- Under-estimated effort for cloud implementation (should have been split up into more stories)

Actions

- Lars Ivar Ramberg and Tomas Klungerbo Olsen Will continue to focus on reporting and implementation in a more balanced manner

5.29 Sprint 16 Retrospective

Date	**11 May 2022**
Participants	Tomas Klungerbo Olsen Lars Ivar Ramberg

What did we do well?

- *Good effort even though the requirements could not be met.*
- *Good communication across the entire team.*

What should we have done better?

- We should have contacted faculty sooner to ask for assistance.

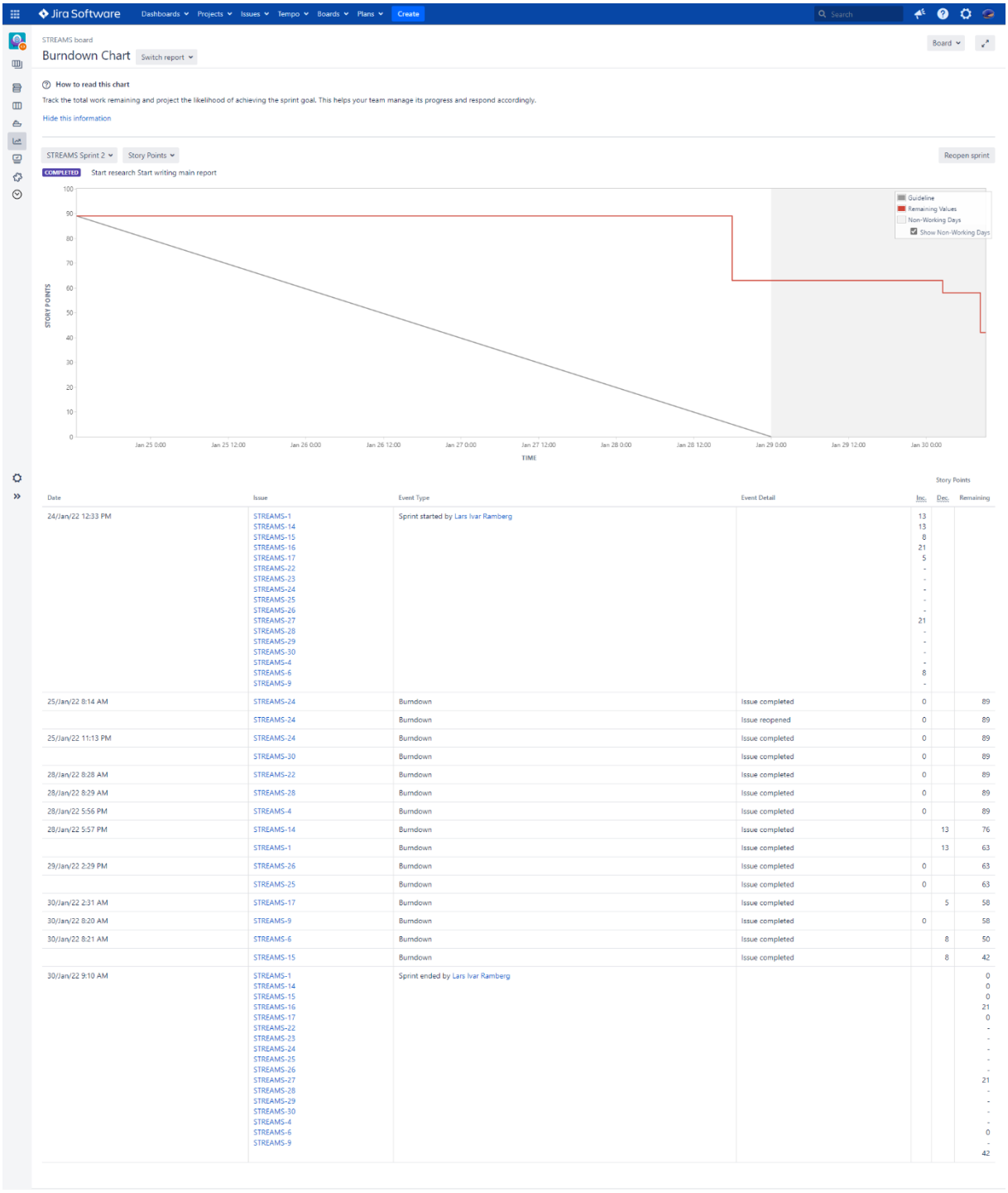
Actions

- Tomas Klungerbo Olsen and Lars Ivar Ramberg will focus on writing the thesis.

5.30 Sprint 1 burndown

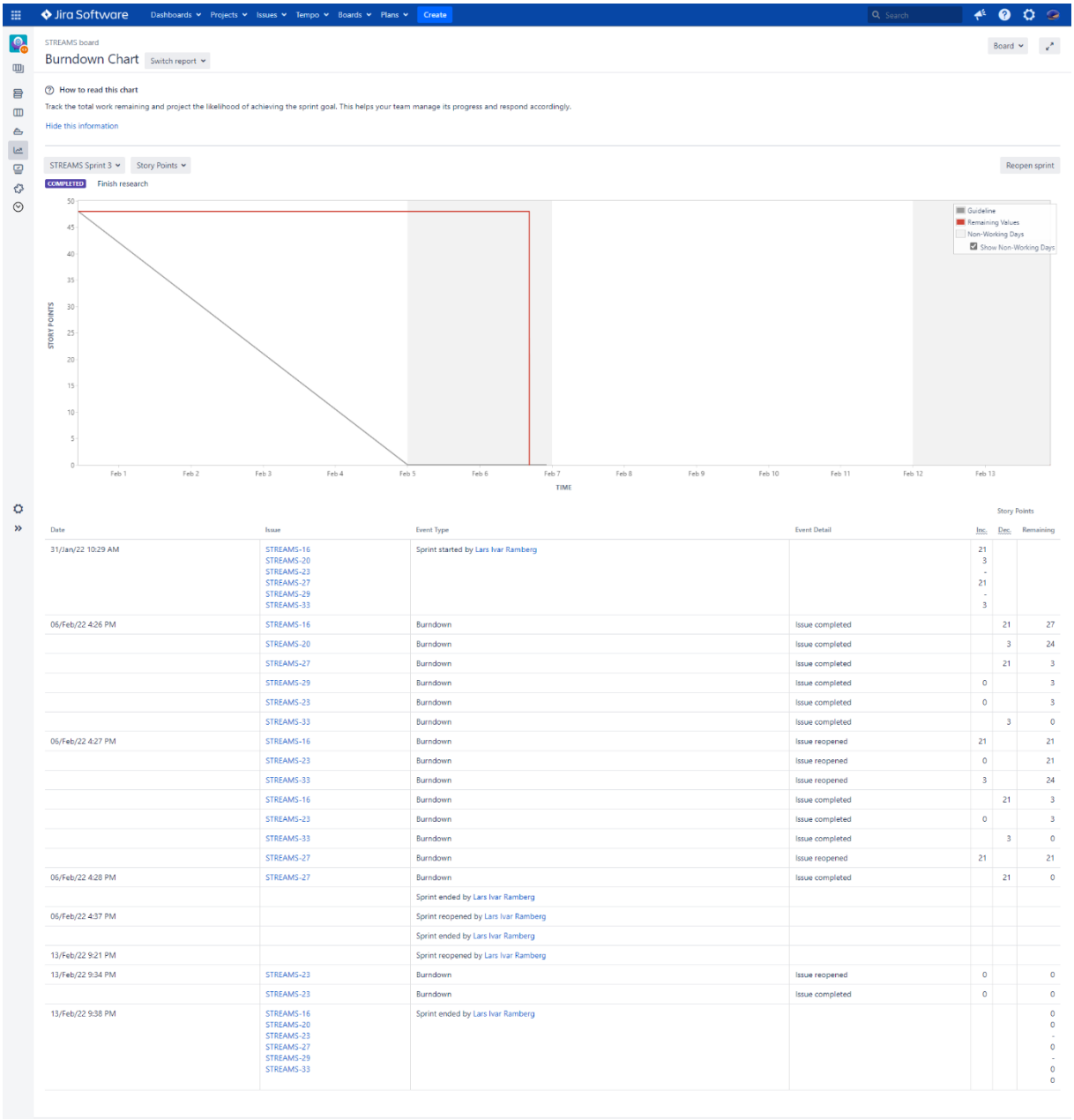
Date	Issue	Event Type	Event Detail	Story Points		
				Inc.	Dec.	Remaining
19/Jan/22 9:23 AM	STREAMS-1 STREAMS-10 STREAMS-11 STREAMS-12 STREAMS-13 STREAMS-14 STREAMS-15 STREAMS-2 STREAMS-3 STREAMS-4 STREAMS-5 STREAMS-6 STREAMS-9	Sprint started by Lars Ivar Ramberg		13 - - - - 13 8 - - - 5 8 -		
	STREAMS-3	Burndown	Issue completed	0		47
	STREAMS-12	Burndown	Issue completed	0		47
19/Jan/22 9:27 AM	STREAMS-13	Burndown	Issue completed	0		47
	STREAMS-2	Burndown	Issue completed	0		47
19/Jan/22 9:31 AM	STREAMS-10	Burndown	Issue completed	0		47
	STREAMS-11	Burndown	Issue completed	0		47
19/Jan/22 9:32 AM	STREAMS-12	Burndown	Issue reopened	0		47
21/Jan/22 8:02 AM	STREAMS-5	Burndown	Issue completed		5	42
24/Jan/22 10:18 AM	STREAMS-9	Burndown	Issue completed	0		42
	STREAMS-9	Burndown	Issue reopened	0		42
24/Jan/22 10:21 AM	STREAMS-12	Burndown	Issue completed	0		42
24/Jan/22 10:23 AM		Sprint ended by Lars Ivar Ramberg				
28/Jan/22 5:56 PM	STREAMS-4	Burndown	Issue completed	0		42
28/Jan/22 5:57 PM	STREAMS-14	Burndown	Issue completed		13	29
	STREAMS-1	Burndown	Issue completed		13	16
30/Jan/22 8:20 AM	STREAMS-9	Burndown	Issue completed	0		16
30/Jan/22 8:21 AM	STREAMS-6	Burndown	Issue completed		8	8
	STREAMS-15	Burndown	Issue completed		8	0
13/Feb/22 9:41 PM		Sprint reopened by Lars Ivar Ramberg				
	STREAMS-14	Scope change	Issue removed from sprint	0		0
	STREAMS-4	Scope change	Issue removed from sprint	0		0
	STREAMS-1	Scope change	Issue removed from sprint	0		0
13/Feb/22 9:42 PM	STREAMS-3	Burndown	Issue reopened	0		0
	STREAMS-2	Burndown	Issue reopened	0		0
	STREAMS-5	Burndown	Issue reopened	5		5
	STREAMS-10	Burndown	Issue reopened	0		5
	STREAMS-11	Burndown	Issue reopened	0		5
	STREAMS-12	Burndown	Issue reopened	0		5
	STREAMS-13	Burndown	Issue reopened	0		5
13/Feb/22 9:43 PM	STREAMS-3	Burndown	Issue completed	0		5
	STREAMS-2	Burndown	Issue completed	0		5
	STREAMS-5	Burndown	Issue completed		5	0
	STREAMS-10	Burndown	Issue completed	0		0
	STREAMS-11	Burndown	Issue completed	0		0
	STREAMS-12	Burndown	Issue completed	0		0
	STREAMS-13	Burndown	Issue completed	0		0
	STREAMS-6	Burndown	Issue reopened	8		8
	STREAMS-15	Burndown	Issue reopened	8		16
	STREAMS-3	Burndown	Issue reopened	0		16
	STREAMS-10	Burndown	Issue reopened	0		16
	STREAMS-6	Burndown	Issue completed		8	8
	STREAMS-15	Burndown	Issue completed		8	0
	STREAMS-10	Burndown	Issue completed	0		0
	STREAMS-3	Burndown	Issue completed	0		0
13/Feb/22 9:44 PM	STREAMS-6	Burndown	Issue reopened	8		8
	STREAMS-15	Burndown	Issue reopened	8		16
	STREAMS-9	Burndown	Issue reopened	0		16
	STREAMS-2	Burndown	Issue reopened	0		16
	STREAMS-5	Burndown	Issue reopened	5		21
	STREAMS-10	Burndown	Issue reopened	0		21
	STREAMS-12	Burndown	Issue reopened	0		21
	STREAMS-11	Burndown	Issue reopened	0		21
	STREAMS-13	Burndown	Issue reopened	0		21
	STREAMS-3	Burndown	Issue reopened	0		21
13/Feb/22 9:45 PM	STREAMS-3	Burndown	Issue completed	0		21
	STREAMS-2	Burndown	Issue completed	0		21
	STREAMS-5	Burndown	Issue completed		5	16
	STREAMS-10	Burndown	Issue completed	0		16
	STREAMS-11	Burndown	Issue completed	0		16
	STREAMS-12	Burndown	Issue completed	0		16
	STREAMS-13	Burndown	Issue completed	0		16
	STREAMS-10 STREAMS-11 STREAMS-12 STREAMS-13 STREAMS-15 STREAMS-2 STREAMS-3 STREAMS-5 STREAMS-6 STREAMS-9	Sprint ended by Lars Ivar Ramberg				- - - - 8 - - 0 8 - 16

5.31 Sprint 2 burndown



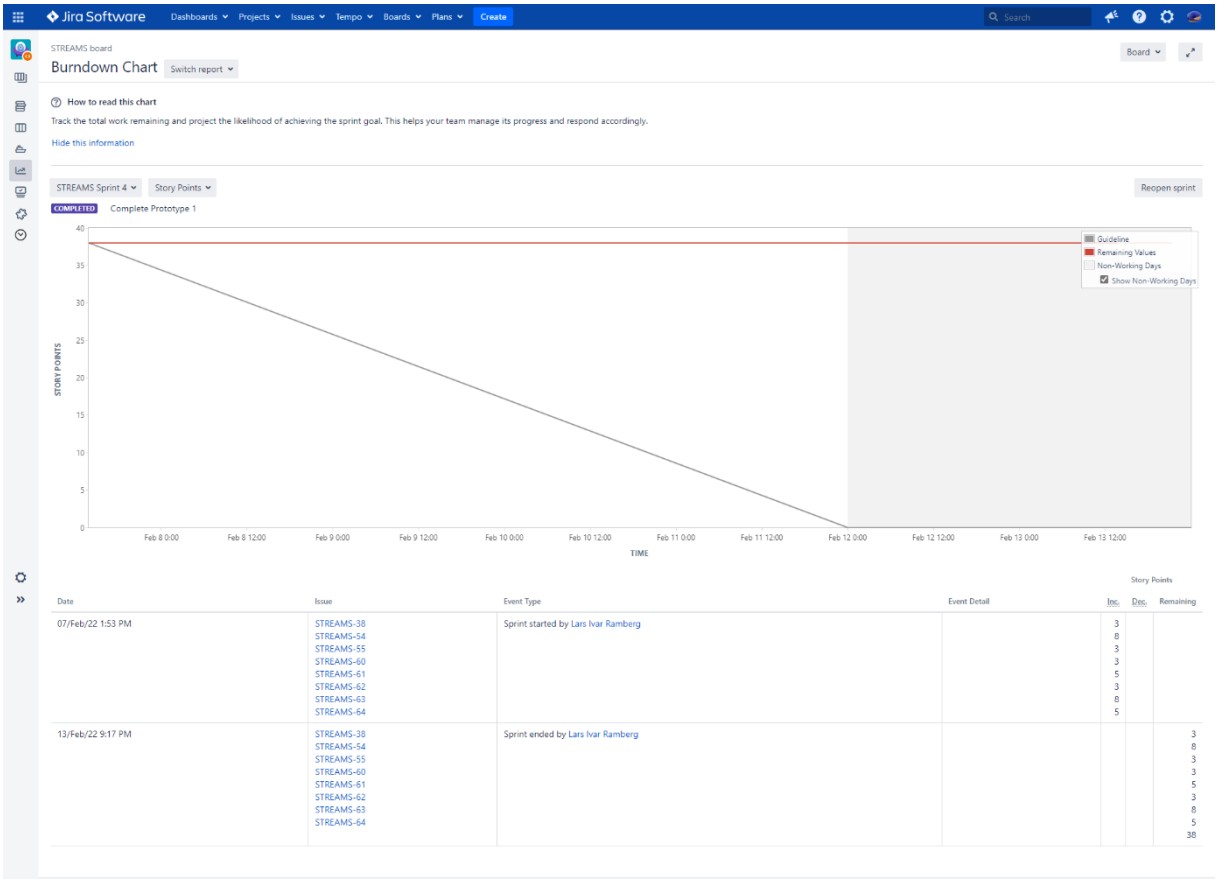
Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
24/Jan/22 12:33 PM	STREAMS-1 STREAMS-14 STREAMS-15 STREAMS-16 STREAMS-17 STREAMS-22 STREAMS-23 STREAMS-24 STREAMS-25 STREAMS-26 STREAMS-27 STREAMS-28 STREAMS-29 STREAMS-30 STREAMS-4 STREAMS-6 STREAMS-9	Sprint started by Lars Ivar Ramberg		13 13 8 21 5 - - - - - 21 - - - - 8 -		
25/Jan/22 8:14 AM	STREAMS-24	Burndown	Issue completed	0		89
	STREAMS-24	Burndown	Issue reopened	0		89
25/Jan/22 11:13 PM	STREAMS-24	Burndown	Issue completed	0		89
	STREAMS-30	Burndown	Issue completed	0		89
28/Jan/22 8:28 AM	STREAMS-22	Burndown	Issue completed	0		89
28/Jan/22 8:29 AM	STREAMS-28	Burndown	Issue completed	0		89
28/Jan/22 5:56 PM	STREAMS-4	Burndown	Issue completed	0		89
28/Jan/22 5:57 PM	STREAMS-14	Burndown	Issue completed		13	76
	STREAMS-1	Burndown	Issue completed		13	63
29/Jan/22 2:29 PM	STREAMS-26	Burndown	Issue completed	0		63
	STREAMS-25	Burndown	Issue completed	0		63
30/Jan/22 2:31 AM	STREAMS-17	Burndown	Issue completed		5	58
30/Jan/22 8:20 AM	STREAMS-9	Burndown	Issue completed	0		58
30/Jan/22 8:21 AM	STREAMS-6	Burndown	Issue completed		8	50
	STREAMS-15	Burndown	Issue completed		8	42
30/Jan/22 9:10 AM	STREAMS-1 STREAMS-14 STREAMS-15 STREAMS-16 STREAMS-17 STREAMS-22 STREAMS-23 STREAMS-24 STREAMS-25 STREAMS-26 STREAMS-27 STREAMS-28 STREAMS-29 STREAMS-30 STREAMS-4 STREAMS-6 STREAMS-9	Sprint ended by Lars Ivar Ramberg				0 0 0 21 0 - - - - - 21 - - - - 0 - 42

5.32 Sprint 3 burndown

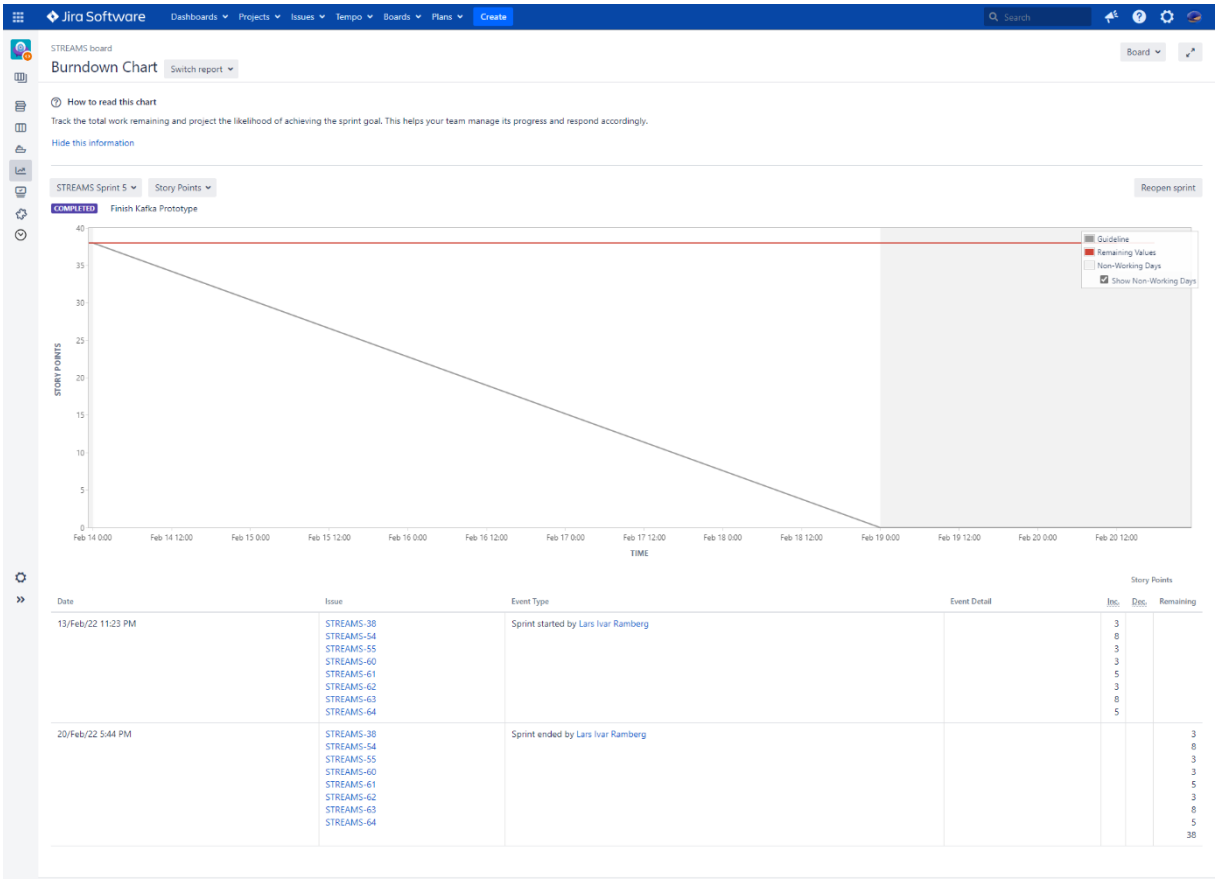


Date	Issue	Event Type	Event Detail	Story Points Inc.	Story Points Dec.	Story Points Remaining
31/Jan/22 10:29 AM	STREAMS-16 STREAMS-20 STREAMS-23 STREAMS-27 STREAMS-29 STREAMS-33	Sprint started by Lars Ivar Ramberg		21 3 - 21 - 3		
06/Feb/22 4:26 PM	STREAMS-16	Burndown	Issue completed		21	27
	STREAMS-20	Burndown	Issue completed		3	24
	STREAMS-27	Burndown	Issue completed		21	3
	STREAMS-29	Burndown	Issue completed	0		3
	STREAMS-23	Burndown	Issue completed	0		3
	STREAMS-33	Burndown	Issue completed		3	0
06/Feb/22 4:27 PM	STREAMS-16	Burndown	Issue reopened	21		21
	STREAMS-23	Burndown	Issue reopened	0		21
	STREAMS-33	Burndown	Issue reopened	3		24
	STREAMS-16	Burndown	Issue completed		21	3
	STREAMS-23	Burndown	Issue completed	0		3
	STREAMS-33	Burndown	Issue completed		3	0
	STREAMS-27	Burndown	Issue reopened	21		21
06/Feb/22 4:28 PM	STREAMS-27	Burndown	Issue completed		21	0
		Sprint ended by Lars Ivar Ramberg				
06/Feb/22 4:37 PM		Sprint reopened by Lars Ivar Ramberg				
		Sprint ended by Lars Ivar Ramberg				
13/Feb/22 9:21 PM		Sprint reopened by Lars Ivar Ramberg				
13/Feb/22 9:34 PM	STREAMS-23	Burndown	Issue reopened	0		0
	STREAMS-23	Burndown	Issue completed	0		0
13/Feb/22 9:38 PM	STREAMS-16 STREAMS-20 STREAMS-23 STREAMS-27 STREAMS-29 STREAMS-33	Sprint ended by Lars Ivar Ramberg				0 0 - 0 - 0 0

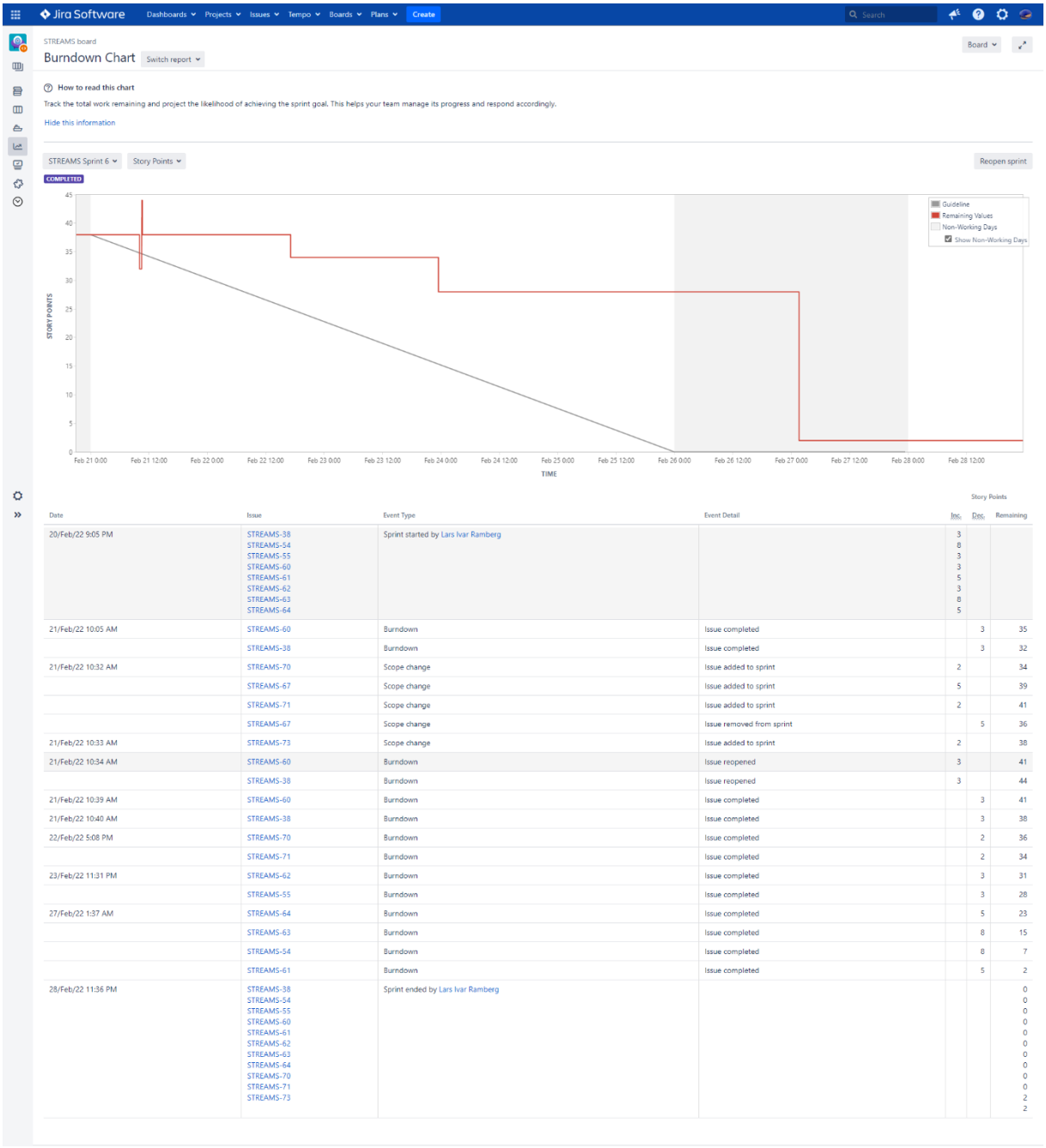
5.33 Sprint 4 burndown



5.34 Sprint 5 burndown

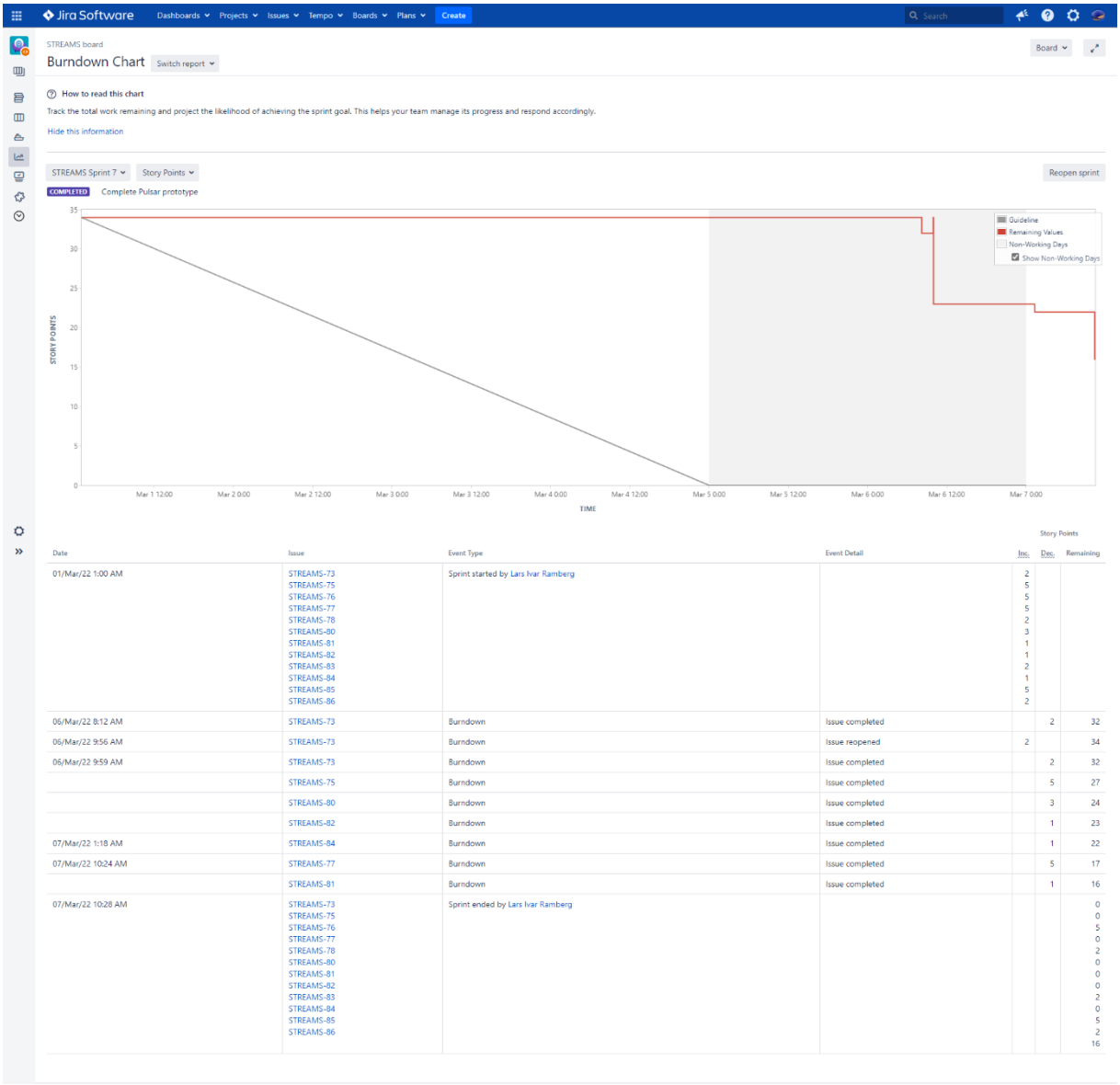


5.35 Sprint 6 burndown



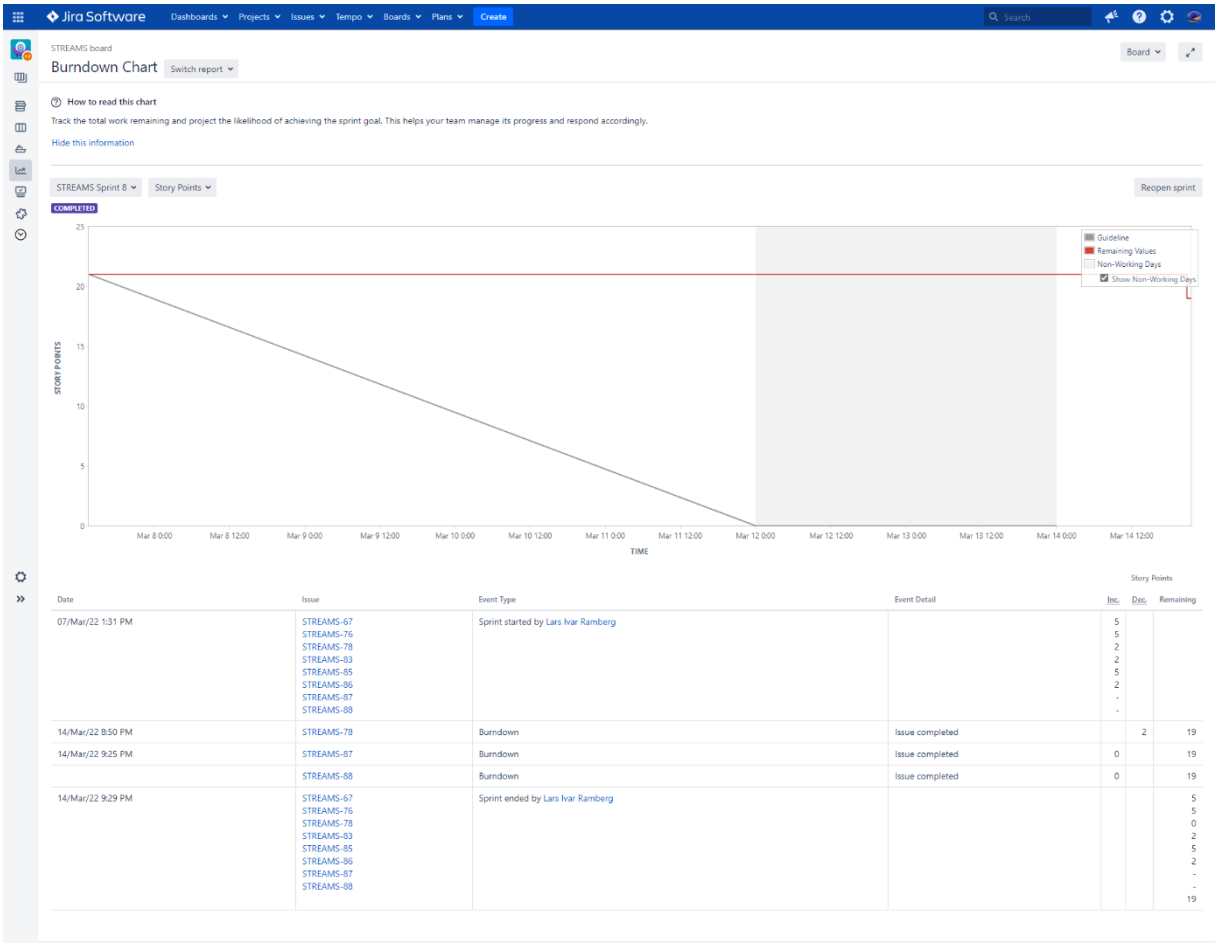
Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
20/Feb/22 9:05 PM	STREAMS-38 STREAMS-54 STREAMS-55 STREAMS-60 STREAMS-61 STREAMS-62 STREAMS-63 STREAMS-64	Sprint started by Lars Ivar Ramberg		3 8 3 3 5 3 8 5		
21/Feb/22 10:05 AM	STREAMS-60	Burndown	Issue completed		3	35
	STREAMS-38	Burndown	Issue completed		3	32
21/Feb/22 10:32 AM	STREAMS-70	Scope change	Issue added to sprint	2		34
	STREAMS-67	Scope change	Issue added to sprint	5		39
	STREAMS-71	Scope change	Issue added to sprint	2		41
	STREAMS-67	Scope change	Issue removed from sprint		5	36
21/Feb/22 10:33 AM	STREAMS-73	Scope change	Issue added to sprint	2		38
21/Feb/22 10:34 AM	STREAMS-60	Burndown	Issue reopened	3		41
	STREAMS-38	Burndown	Issue reopened	3		44
21/Feb/22 10:39 AM	STREAMS-60	Burndown	Issue completed		3	41
21/Feb/22 10:40 AM	STREAMS-38	Burndown	Issue completed		3	38
22/Feb/22 5:08 PM	STREAMS-70	Burndown	Issue completed		2	36
	STREAMS-71	Burndown	Issue completed		2	34
23/Feb/22 11:31 PM	STREAMS-62	Burndown	Issue completed		3	31
	STREAMS-55	Burndown	Issue completed		3	28
27/Feb/22 1:37 AM	STREAMS-64	Burndown	Issue completed		5	23
	STREAMS-63	Burndown	Issue completed		8	15
	STREAMS-54	Burndown	Issue completed		8	7
	STREAMS-61	Burndown	Issue completed		5	2
28/Feb/22 11:36 PM	STREAMS-38 STREAMS-54 STREAMS-55 STREAMS-60 STREAMS-61 STREAMS-62 STREAMS-63 STREAMS-64 STREAMS-70 STREAMS-71 STREAMS-73	Sprint ended by Lars Ivar Ramberg				0 0 0 0 0 0 0 0 0 0 2 2

5.36 Sprint 7 burndown



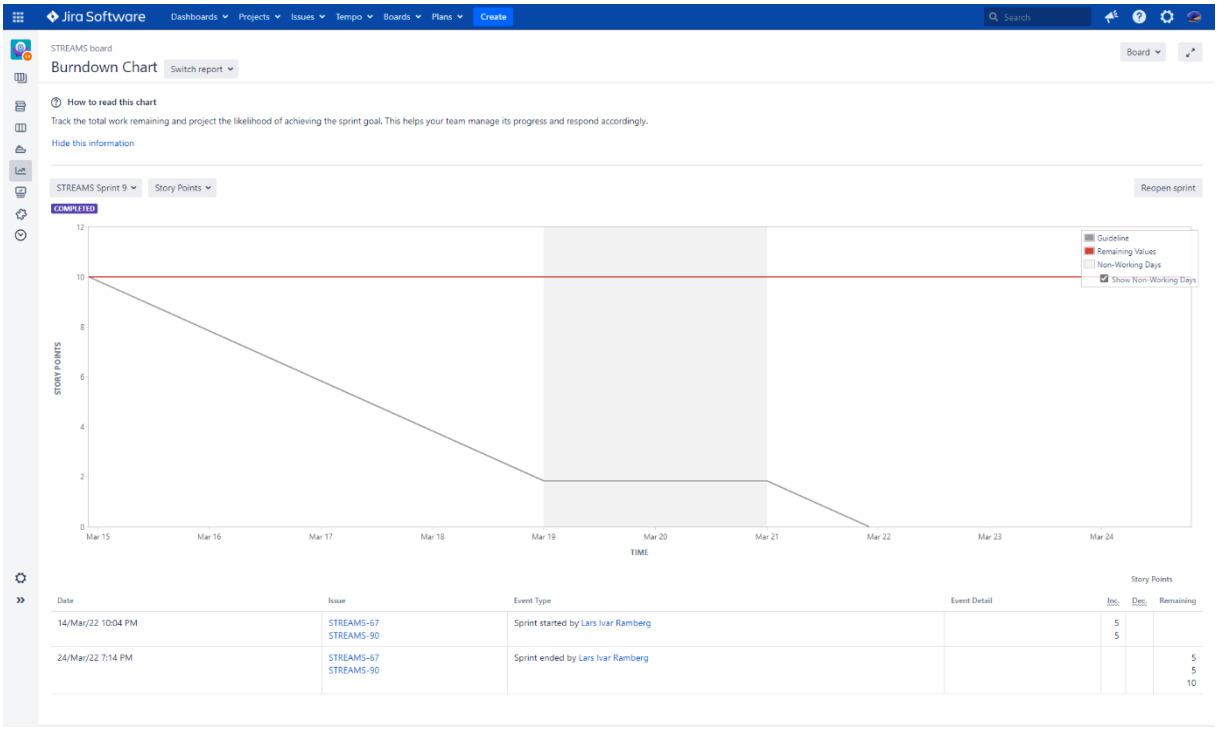
Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
01/Mar/22 1:00 AM	STREAMS-73 STREAMS-75 STREAMS-76 STREAMS-77 STREAMS-78 STREAMS-80 STREAMS-81 STREAMS-82 STREAMS-83 STREAMS-84 STREAMS-85 STREAMS-86	Sprint started by Lars Ivar Ramberg		2 5 5 5 2 3 1 1 2 1 5 2		
06/Mar/22 8:12 AM	STREAMS-73	Burndown	Issue completed		2	32
06/Mar/22 9:56 AM	STREAMS-73	Burndown	Issue reopened	2		34
06/Mar/22 9:59 AM	STREAMS-73	Burndown	Issue completed		2	32
	STREAMS-75	Burndown	Issue completed		5	27
	STREAMS-80	Burndown	Issue completed		3	24
	STREAMS-82	Burndown	Issue completed		1	23
07/Mar/22 1:18 AM	STREAMS-84	Burndown	Issue completed		1	22
07/Mar/22 10:24 AM	STREAMS-77	Burndown	Issue completed		5	17
	STREAMS-81	Burndown	Issue completed		1	16
07/Mar/22 10:28 AM	STREAMS-73 STREAMS-75 STREAMS-76 STREAMS-77 STREAMS-78 STREAMS-80 STREAMS-81 STREAMS-82 STREAMS-83 STREAMS-84 STREAMS-85 STREAMS-86	Sprint ended by Lars Ivar Ramberg				0 0 5 0 2 0 0 0 2 0 5 2 16

5.37 Sprint 8 burndown

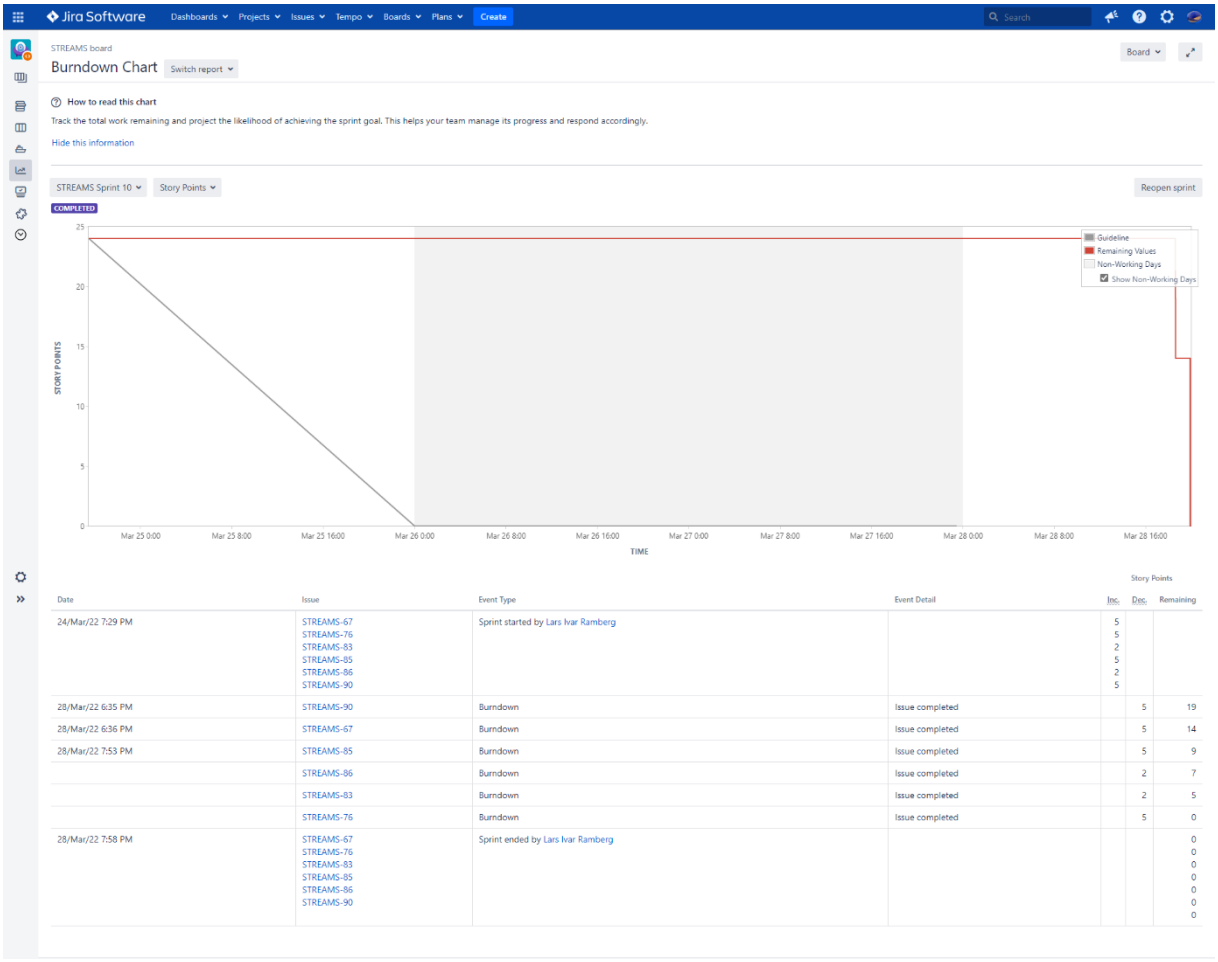


Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
07/Mar/22 1:31 PM	STREAMS-67 STREAMS-76 STREAMS-78 STREAMS-83 STREAMS-85 STREAMS-86 STREAMS-87 STREAMS-88	Sprint started by Lars Ivar Ramberg		5 5 2 2 5 2 - -		
14/Mar/22 8:50 PM	STREAMS-78	Burndown	Issue completed		2	19
14/Mar/22 9:25 PM	STREAMS-87	Burndown	Issue completed	0		19
	STREAMS-88	Burndown	Issue completed	0		19
14/Mar/22 9:29 PM	STREAMS-67 STREAMS-76 STREAMS-78 STREAMS-83 STREAMS-85 STREAMS-86 STREAMS-87 STREAMS-88	Sprint ended by Lars Ivar Ramberg				5 5 0 2 5 2 - - 19

5.38 Sprint 9 burndown

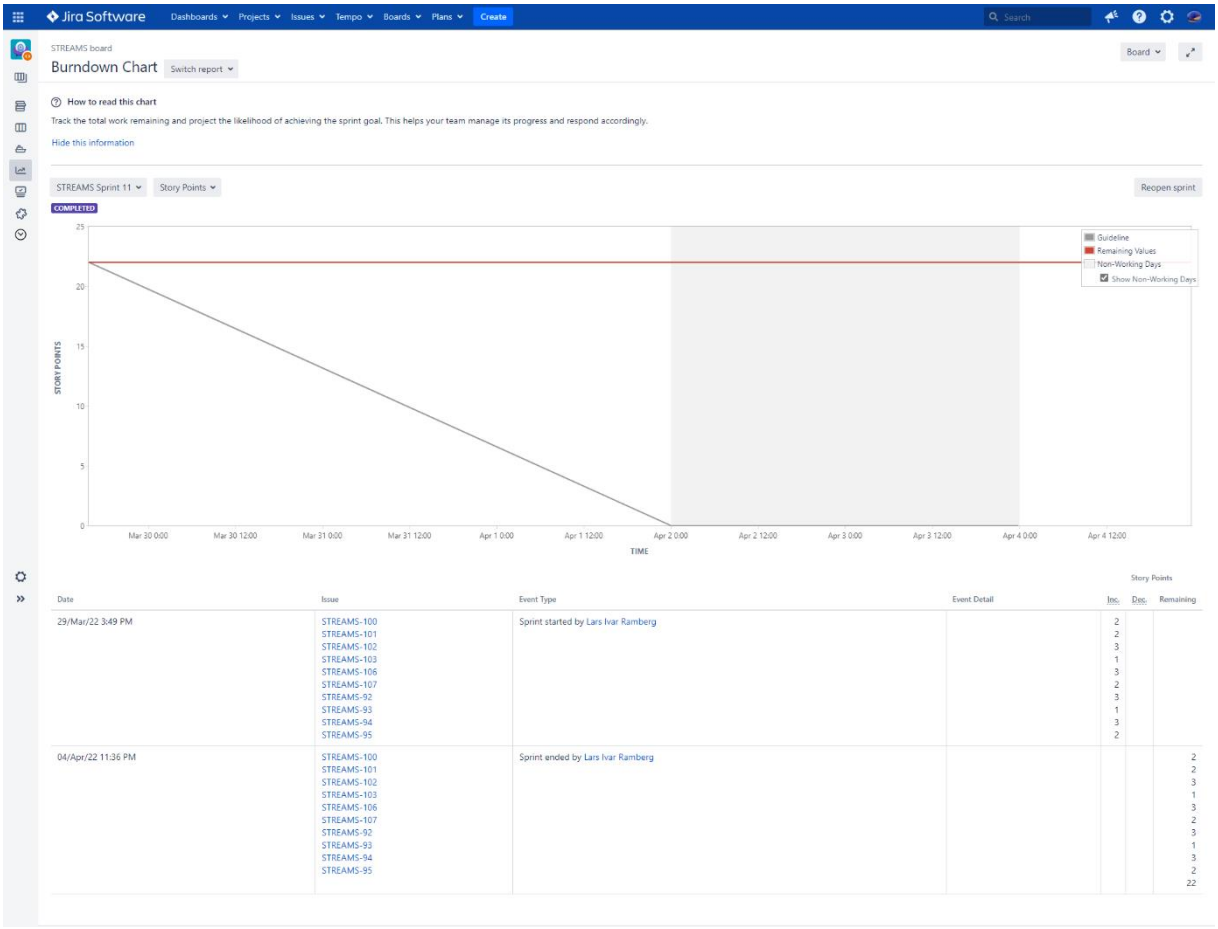


5.39 Sprint 10 burndown

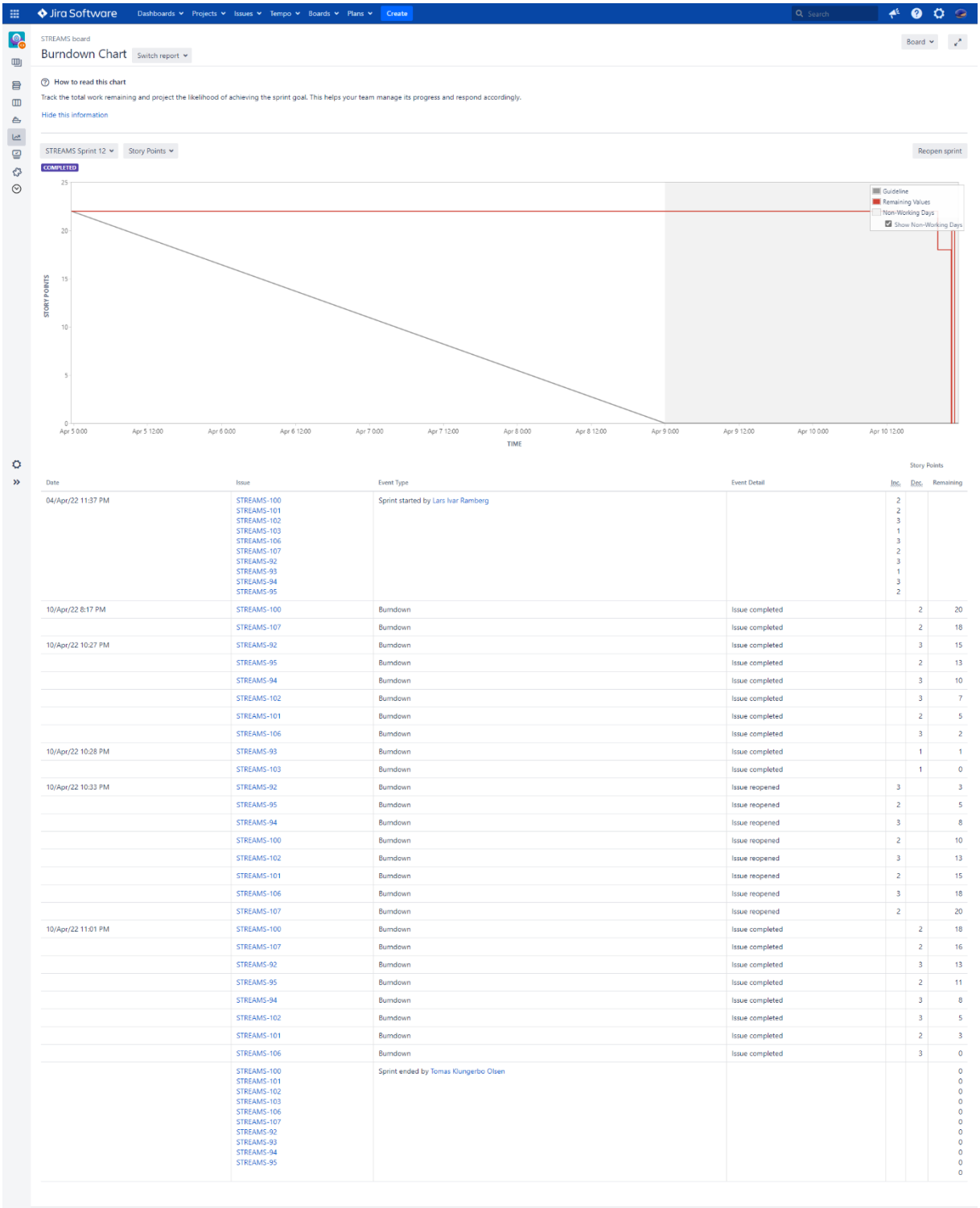


Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
24/Mar/22 7:29 PM	STREAMS-67 STREAMS-76 STREAMS-83 STREAMS-85 STREAMS-86 STREAMS-90	Sprint started by Lars Ivar Ramberg		5 5 2 5 2 5		
28/Mar/22 6:35 PM	STREAMS-90	Burndown	Issue completed		5	19
28/Mar/22 6:36 PM	STREAMS-67	Burndown	Issue completed		5	14
28/Mar/22 7:53 PM	STREAMS-85	Burndown	Issue completed		5	9
	STREAMS-86	Burndown	Issue completed		2	7
	STREAMS-83	Burndown	Issue completed		2	5
	STREAMS-76	Burndown	Issue completed		5	0
28/Mar/22 7:58 PM	STREAMS-67 STREAMS-76 STREAMS-83 STREAMS-85 STREAMS-86 STREAMS-90	Sprint ended by Lars Ivar Ramberg				0 0 0 0 0 0 0

5.40 Sprint 11 burndown

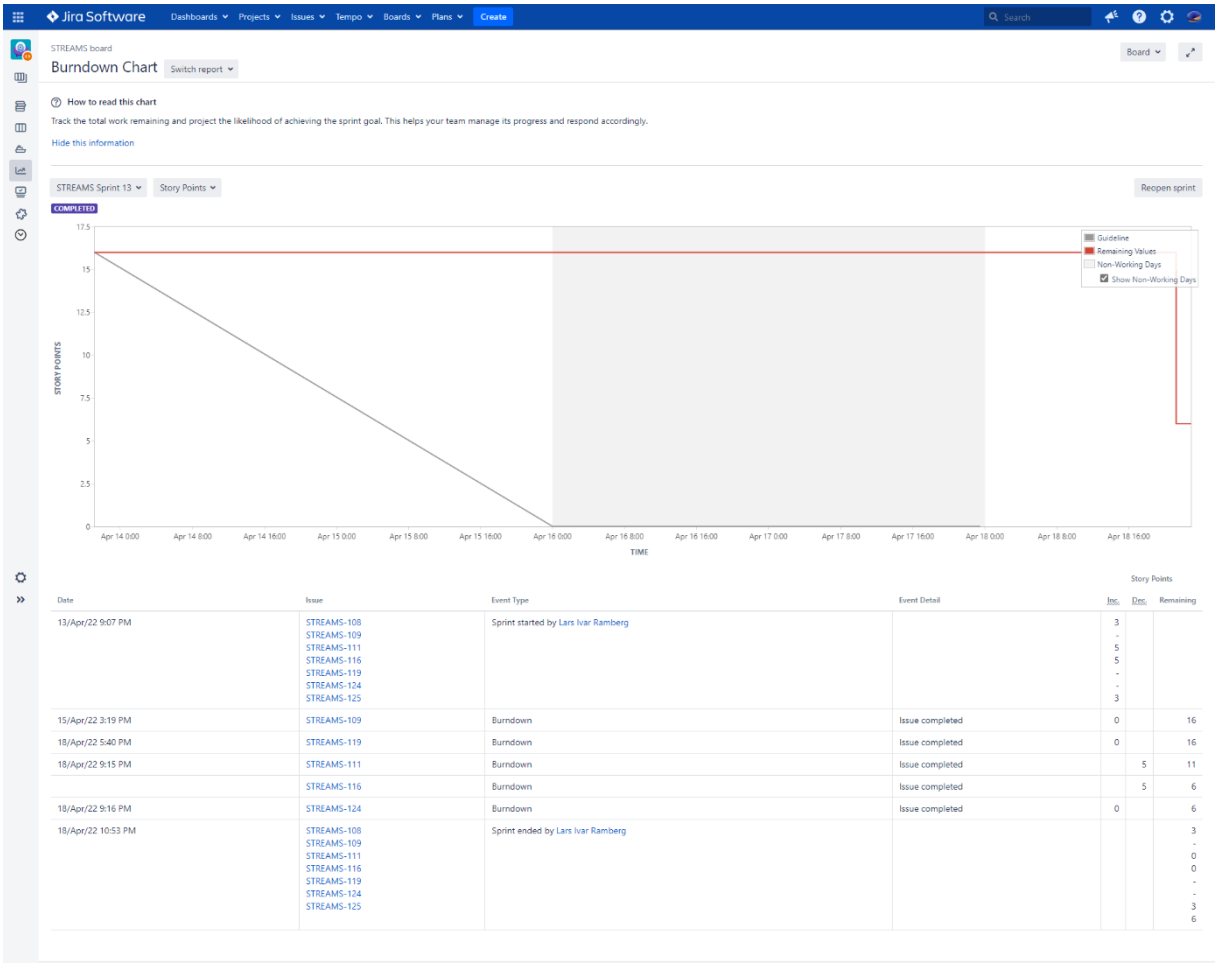


5.41 Sprint 12 burndown



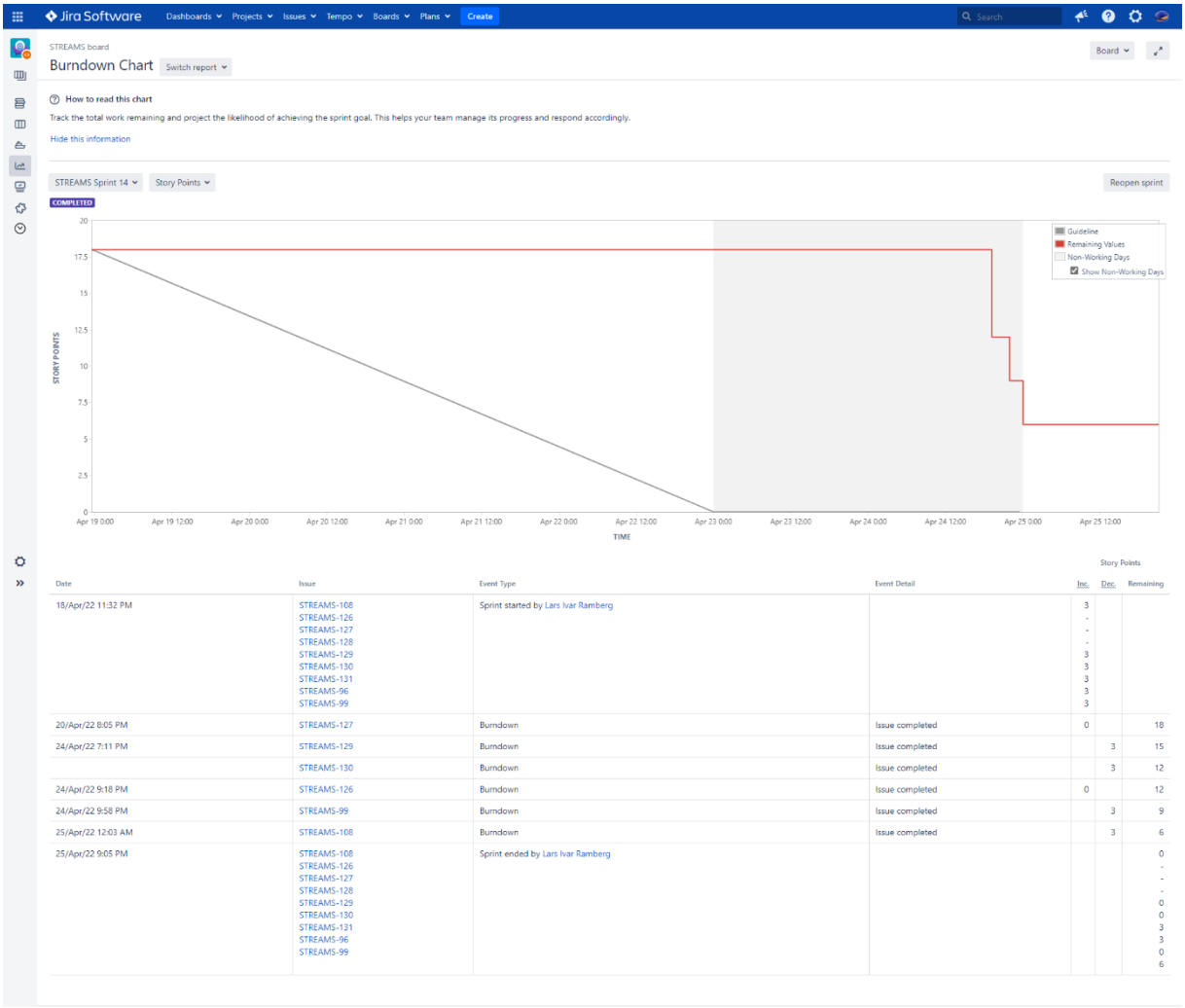
Date	Issue	Event Type	Event Detail	Story Points Inc.	Story Points Dec.	Story Points Remaining
04/Apr/22 11:37 PM	STREAMS-100 STREAMS-101 STREAMS-102 STREAMS-103 STREAMS-106 STREAMS-107 STREAMS-92 STREAMS-93 STREAMS-94 STREAMS-95	Sprint started by Lars Ivar Ramberg		2 2 3 1 3 2 3 1 3 2		
10/Apr/22 8:17 PM	STREAMS-100	Burndown	Issue completed		2	20
	STREAMS-107	Burndown	Issue completed		2	18
10/Apr/22 10:27 PM	STREAMS-92	Burndown	Issue completed		3	15
	STREAMS-95	Burndown	Issue completed		2	13
	STREAMS-94	Burndown	Issue completed		3	10
	STREAMS-102	Burndown	Issue completed		3	7
	STREAMS-101	Burndown	Issue completed		2	5
	STREAMS-106	Burndown	Issue completed		3	2
10/Apr/22 10:28 PM	STREAMS-93	Burndown	Issue completed		1	1
	STREAMS-103	Burndown	Issue completed		1	0
10/Apr/22 10:33 PM	STREAMS-92	Burndown	Issue reopened	3		3
	STREAMS-95	Burndown	Issue reopened	2		5
	STREAMS-94	Burndown	Issue reopened	3		8
	STREAMS-100	Burndown	Issue reopened	2		10
	STREAMS-102	Burndown	Issue reopened	3		13
	STREAMS-101	Burndown	Issue reopened	2		15
	STREAMS-106	Burndown	Issue reopened	3		18
	STREAMS-107	Burndown	Issue reopened	2		20
10/Apr/22 11:01 PM	STREAMS-100	Burndown	Issue completed		2	18
	STREAMS-107	Burndown	Issue completed		2	16
	STREAMS-92	Burndown	Issue completed		3	13
	STREAMS-95	Burndown	Issue completed		2	11
	STREAMS-94	Burndown	Issue completed		3	8
	STREAMS-102	Burndown	Issue completed		3	5
	STREAMS-101	Burndown	Issue completed		2	3
	STREAMS-106	Burndown	Issue completed		3	0
	STREAMS-100 STREAMS-101 STREAMS-102 STREAMS-103 STREAMS-106 STREAMS-107 STREAMS-92 STREAMS-93 STREAMS-94 STREAMS-95	Sprint ended by Tomas Klungerbo Olsen				0 0 0 0 0 0 0 0 0 0

5.42 Sprint 13 burndown



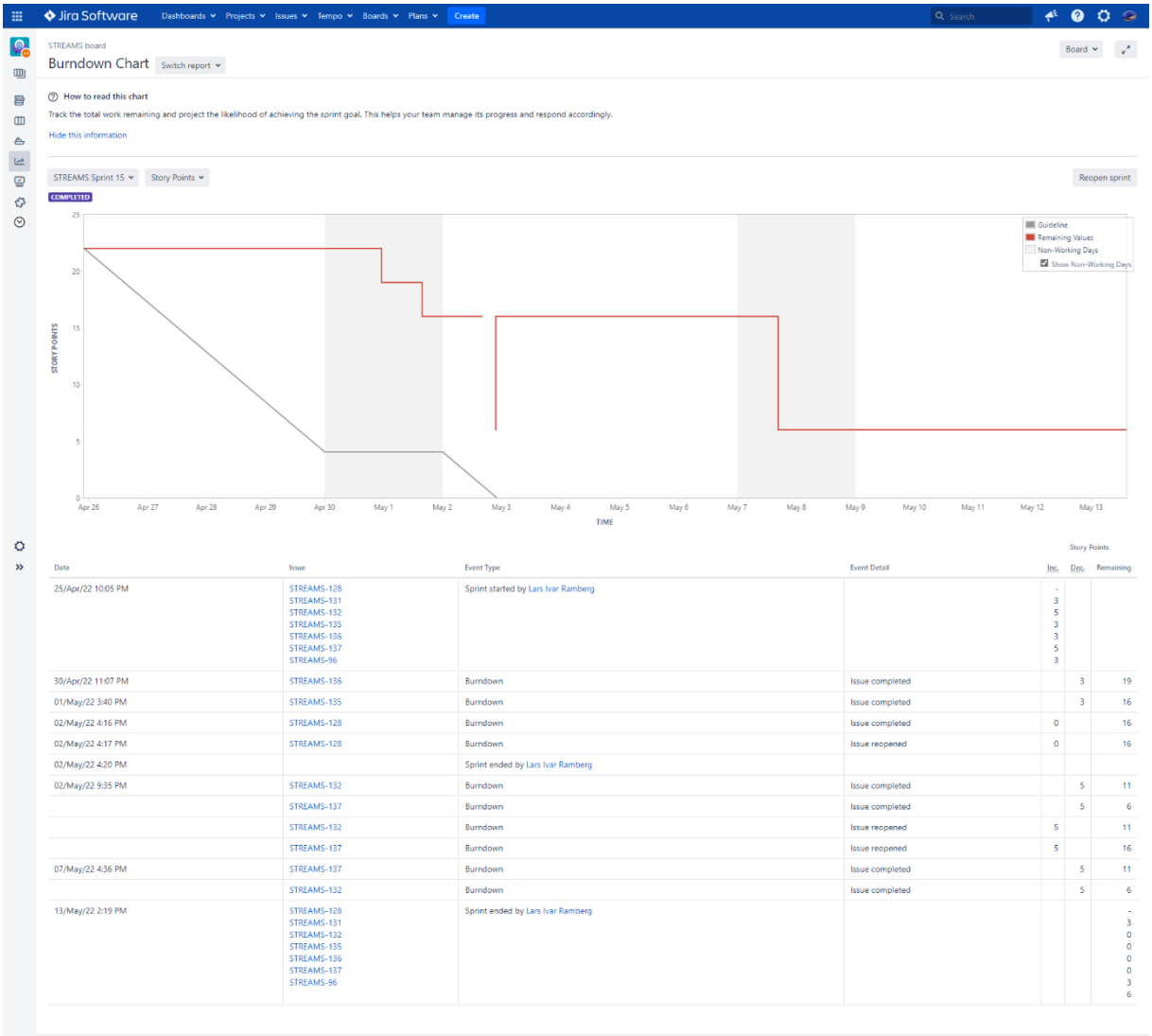
Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
13/Apr/22 9:07 PM	STREAMS-108 STREAMS-109 STREAMS-111 STREAMS-116 STREAMS-119 STREAMS-124 STREAMS-125	Sprint started by Lars Ivar Ramberg		3 - 5 5 - - 3		
15/Apr/22 3:19 PM	STREAMS-109	Burndown	Issue completed	0		16
18/Apr/22 5:40 PM	STREAMS-119	Burndown	Issue completed	0		16
18/Apr/22 9:15 PM	STREAMS-111	Burndown	Issue completed		5	11
	STREAMS-116	Burndown	Issue completed		5	6
18/Apr/22 9:16 PM	STREAMS-124	Burndown	Issue completed	0		6
18/Apr/22 10:53 PM	STREAMS-108 STREAMS-109 STREAMS-111 STREAMS-116 STREAMS-119 STREAMS-124 STREAMS-125	Sprint ended by Lars Ivar Ramberg				3 - 0 0 - - 3 6

5.43 Sprint 14 burndown



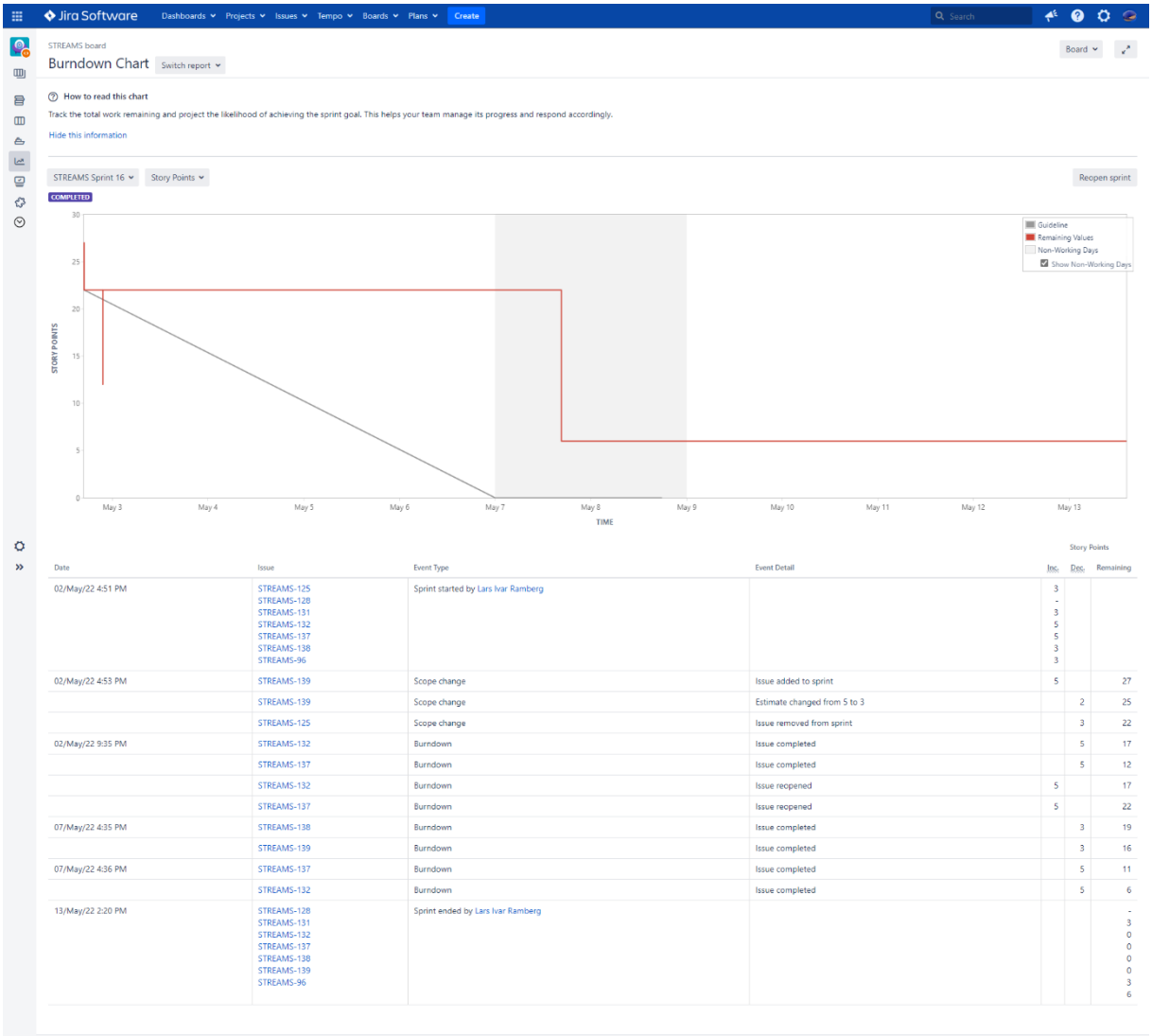
Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
18/Apr/22 11:32 PM	STREAMS-108 STREAMS-126 STREAMS-127 STREAMS-128 STREAMS-129 STREAMS-130 STREAMS-131 STREAMS-96 STREAMS-99	Sprint started by Lars Ivar Ramberg		3 - - - 3 3 3 3 3		
20/Apr/22 8:05 PM	STREAMS-127	Burndown	Issue completed	0		18
24/Apr/22 7:11 PM	STREAMS-129	Burndown	Issue completed		3	15
	STREAMS-130	Burndown	Issue completed		3	12
24/Apr/22 9:18 PM	STREAMS-126	Burndown	Issue completed	0		12
24/Apr/22 9:58 PM	STREAMS-99	Burndown	Issue completed		3	9
25/Apr/22 12:03 AM	STREAMS-108	Burndown	Issue completed		3	6
25/Apr/22 9:05 PM	STREAMS-108 STREAMS-126 STREAMS-127 STREAMS-128 STREAMS-129 STREAMS-130 STREAMS-131 STREAMS-96 STREAMS-99	Sprint ended by Lars Ivar Ramberg				0 - - - 0 0 3 3 0 6

5.44 Sprint 15 burndown



Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
25/Apr/22 10:05 PM	STREAMS-128 STREAMS-131 STREAMS-132 STREAMS-135 STREAMS-136 STREAMS-137 STREAMS-96	Sprint started by Lars Ivar Ramberg		- 3 5 3 3 5 3		
30/Apr/22 11:07 PM	STREAMS-136	Burndown	Issue completed		3	19
01/May/22 3:40 PM	STREAMS-135	Burndown	Issue completed		3	16
02/May/22 4:16 PM	STREAMS-128	Burndown	Issue completed	0		16
02/May/22 4:17 PM	STREAMS-128	Burndown	Issue reopened	0		16
02/May/22 4:20 PM		Sprint ended by Lars Ivar Ramberg				
02/May/22 9:35 PM	STREAMS-132	Burndown	Issue completed		5	11
	STREAMS-137	Burndown	Issue completed		5	6
	STREAMS-132	Burndown	Issue reopened	5		11
	STREAMS-137	Burndown	Issue reopened	5		16
07/May/22 4:36 PM	STREAMS-137	Burndown	Issue completed		5	11
	STREAMS-132	Burndown	Issue completed		5	6
13/May/22 2:19 PM	STREAMS-128 STREAMS-131 STREAMS-132 STREAMS-135 STREAMS-136 STREAMS-137 STREAMS-96	Sprint ended by Lars Ivar Ramberg				- 3 0 0 0 0 3 6

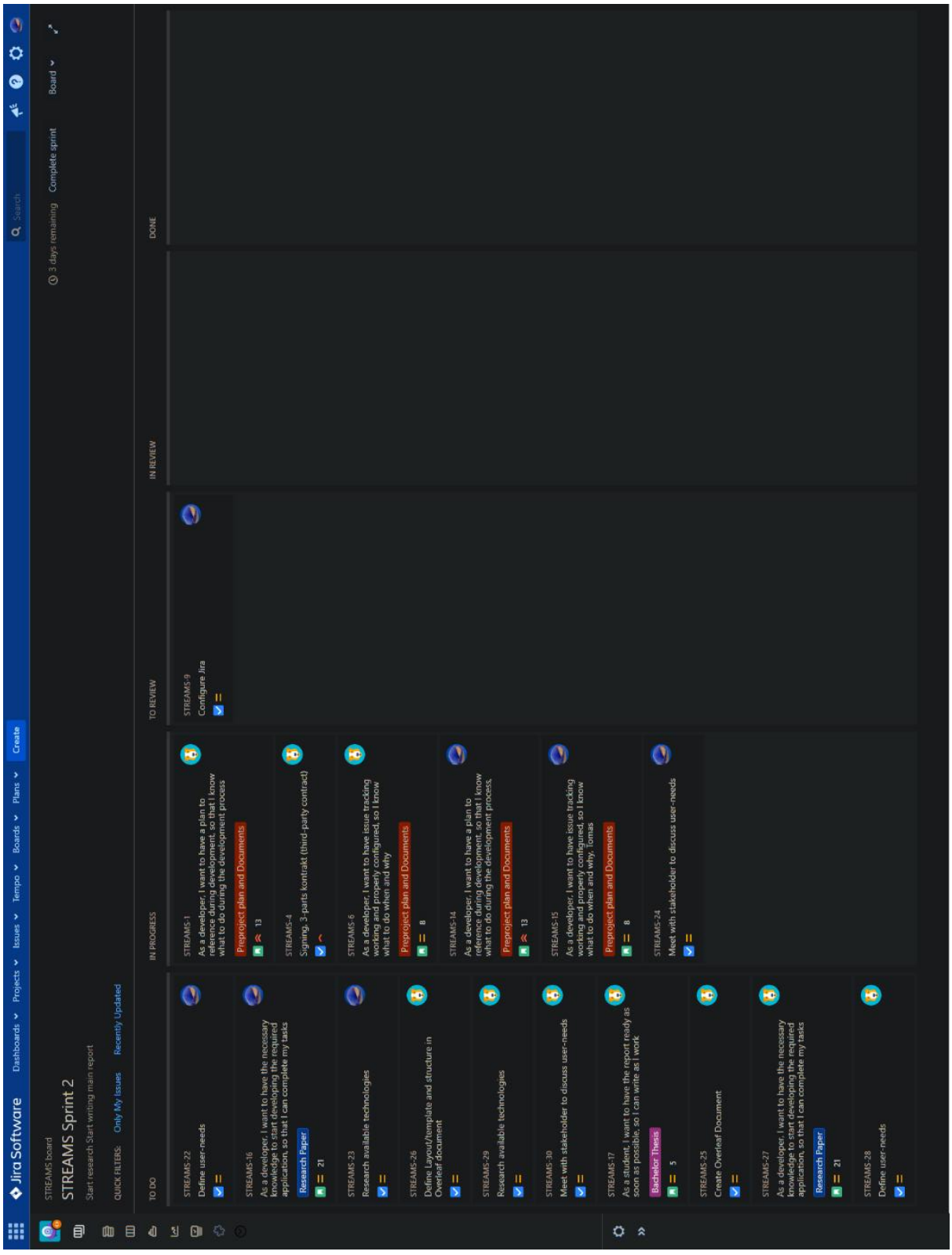
5.45 Sprint 16 burndown



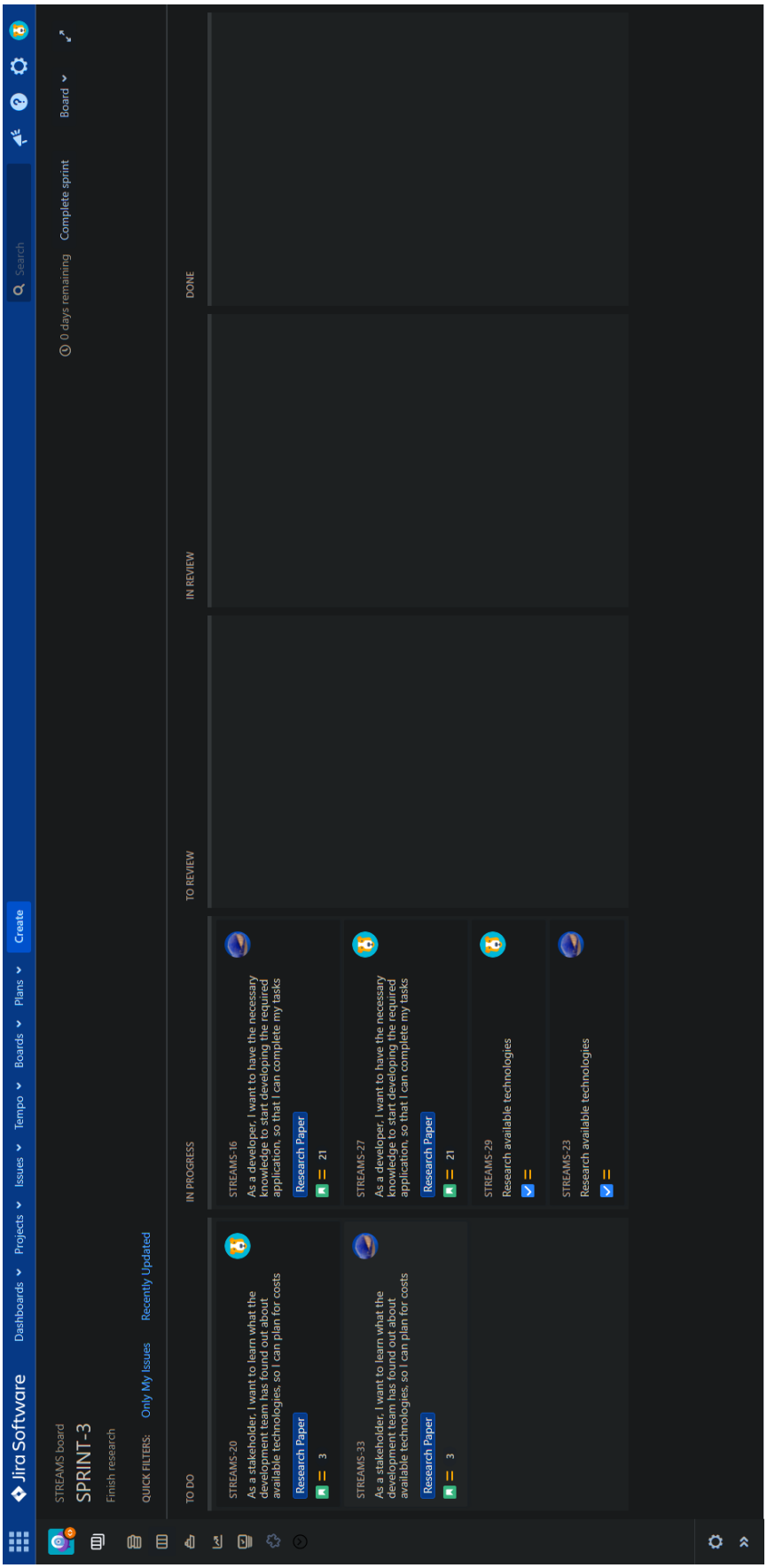
Date	Issue	Event Type	Event Detail	Story Points Inc.	Dec.	Remaining
02/May/22 4:51 PM	STREAMS-125 STREAMS-128 STREAMS-131 STREAMS-132 STREAMS-137 STREAMS-138 STREAMS-96	Sprint started by Lars Ivar Ramberg		3 - 3 5 5 3 3		
02/May/22 4:53 PM	STREAMS-139	Scope change	Issue added to sprint	5		27
	STREAMS-139	Scope change	Estimate changed from 5 to 3		2	25
	STREAMS-125	Scope change	Issue removed from sprint		3	22
02/May/22 9:35 PM	STREAMS-132	Burndown	Issue completed		5	17
	STREAMS-137	Burndown	Issue completed		5	12
	STREAMS-132	Burndown	Issue reopened	5		17
	STREAMS-137	Burndown	Issue reopened	5		22
07/May/22 4:35 PM	STREAMS-138	Burndown	Issue completed		3	19
	STREAMS-139	Burndown	Issue completed		3	16
07/May/22 4:36 PM	STREAMS-137	Burndown	Issue completed		5	11
	STREAMS-132	Burndown	Issue completed		5	6
13/May/22 2:20 PM	STREAMS-128 STREAMS-131 STREAMS-132 STREAMS-137 STREAMS-138 STREAMS-139 STREAMS-96	Sprint ended by Lars Ivar Ramberg				- 3 0 0 0 0 3 6

5.46 Sprint 1 skjermdump

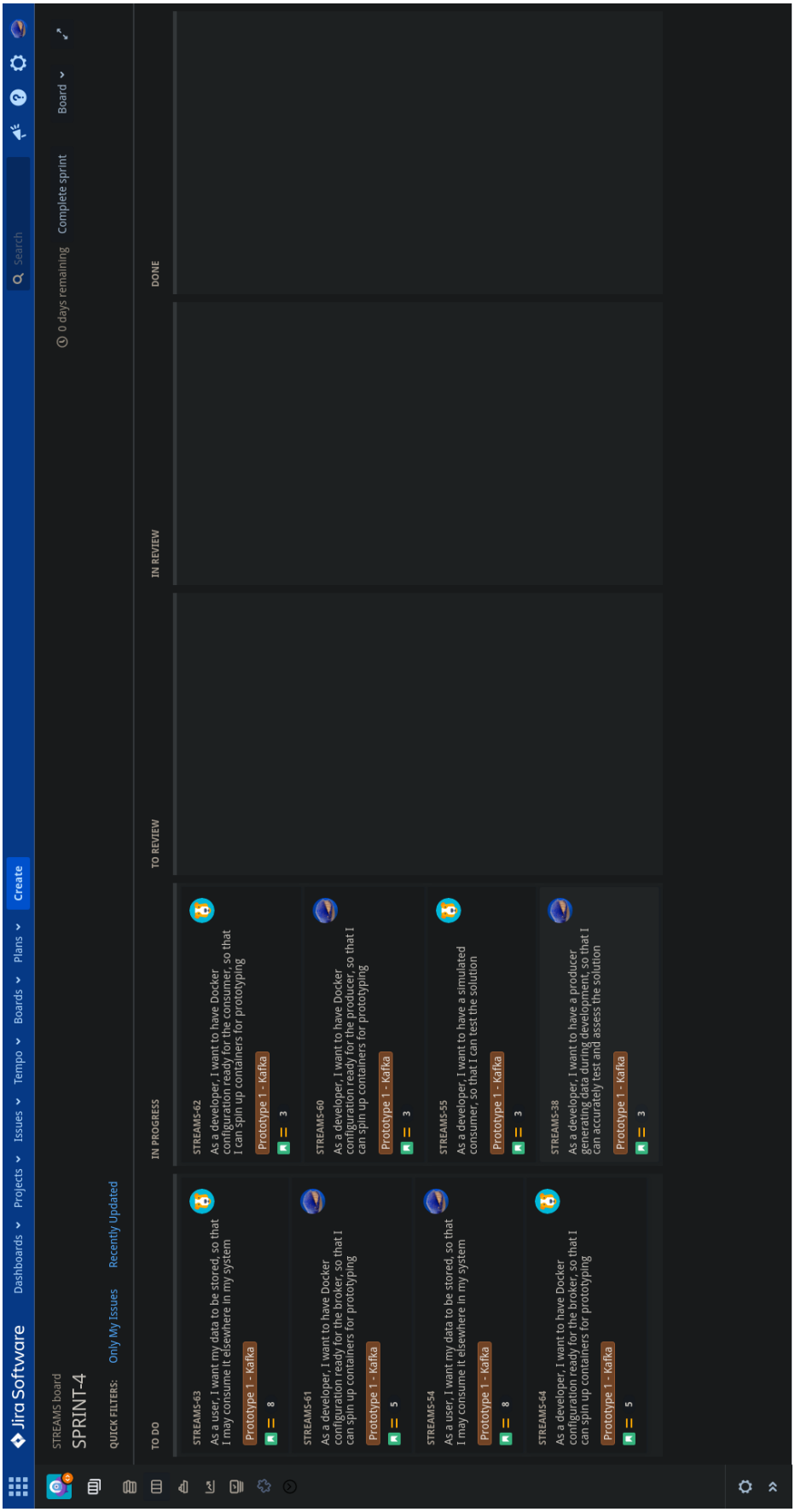
5.47 Sprint 2 skjermdump



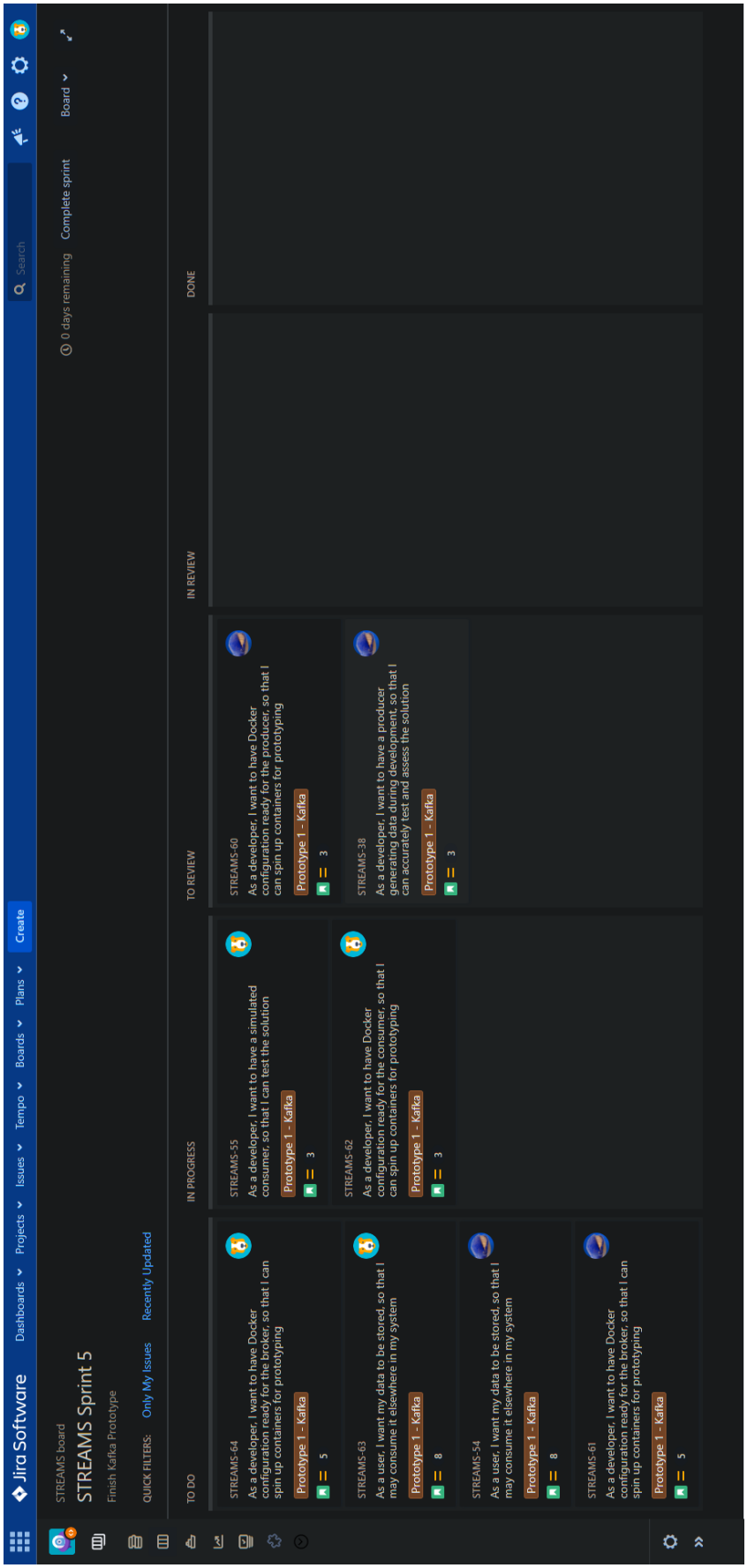
5.48 Sprint 3 skjermdump



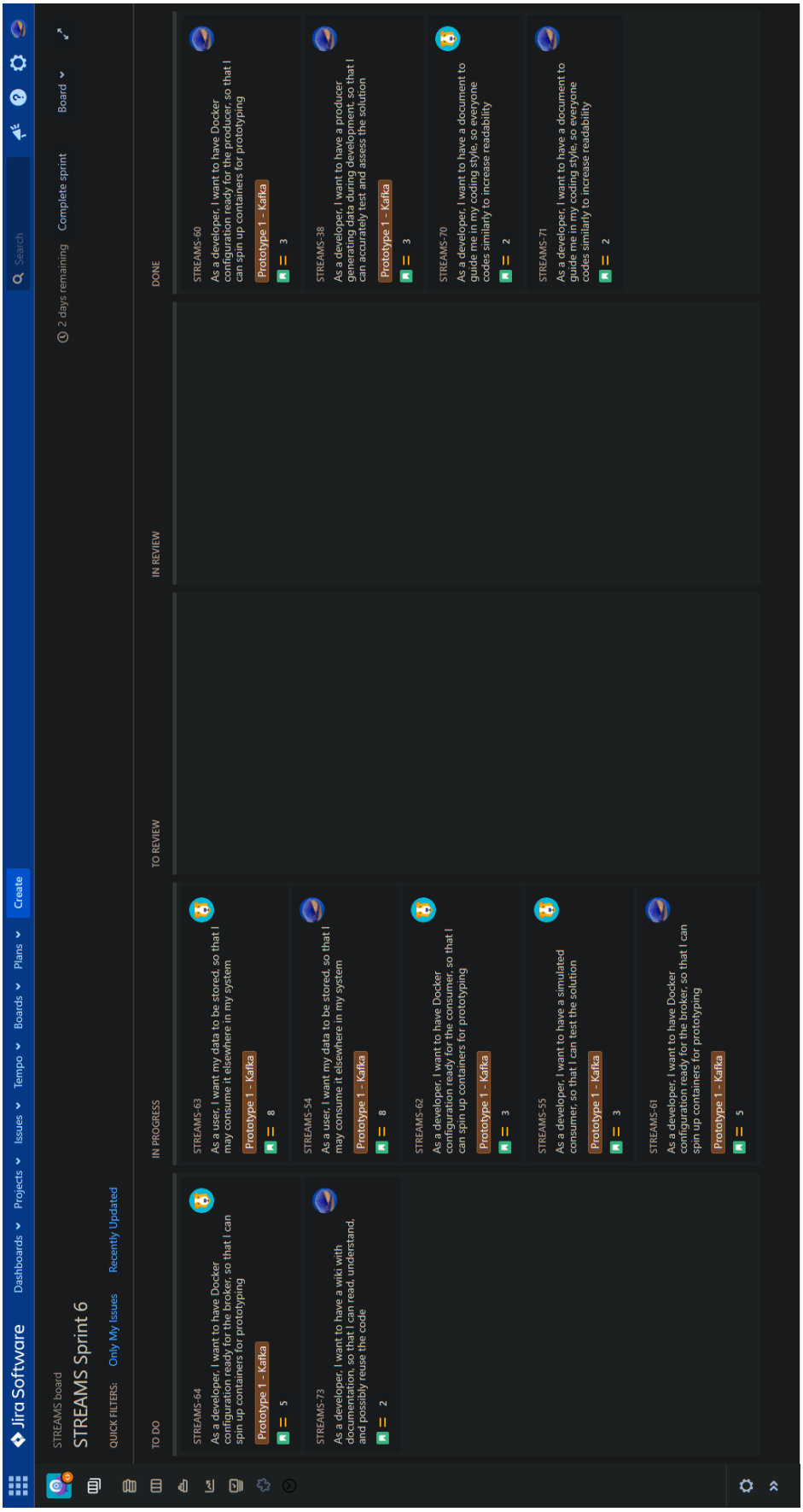
5.49 Sprint 4 skjermdump



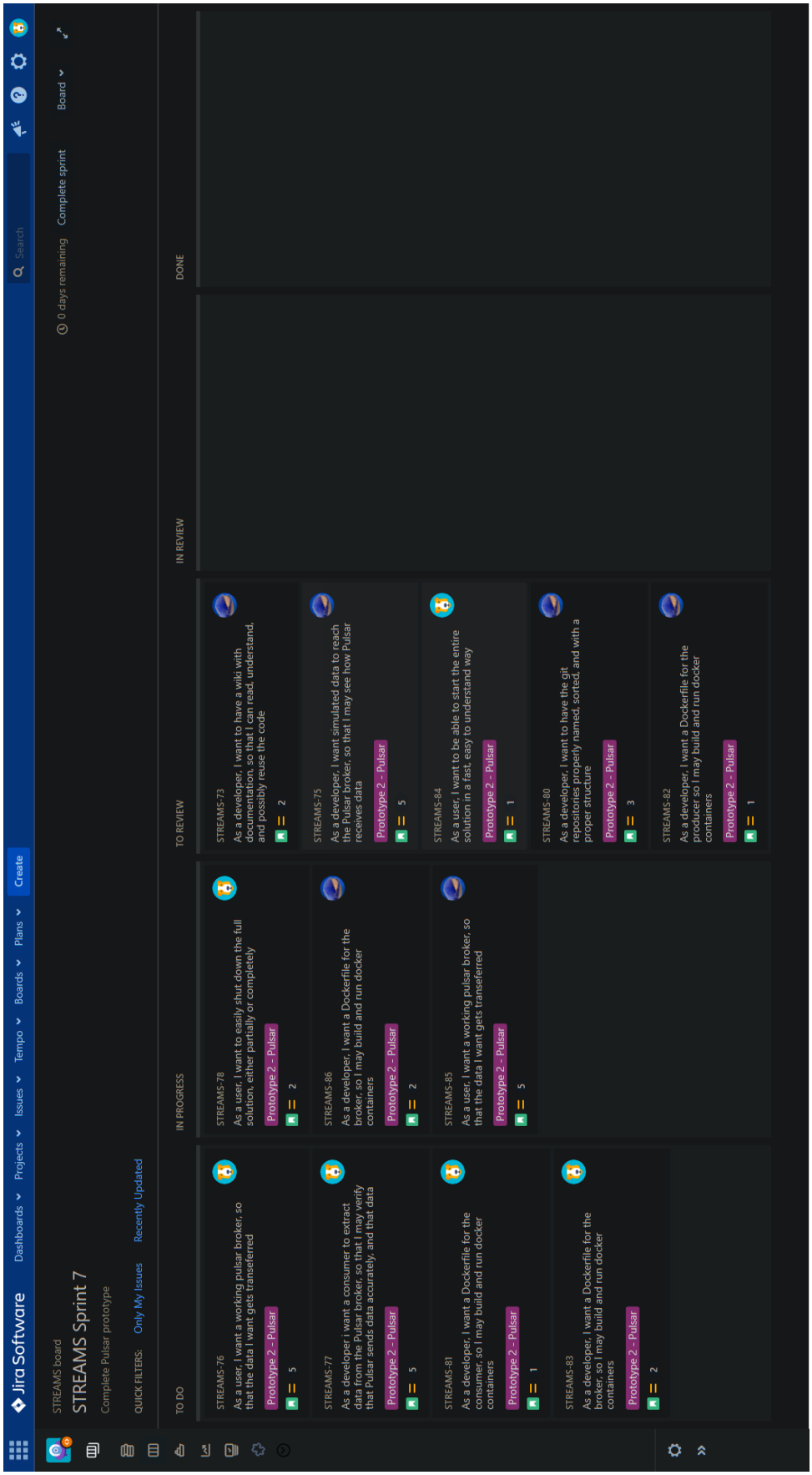
5.50 Sprint 5 skjermdump



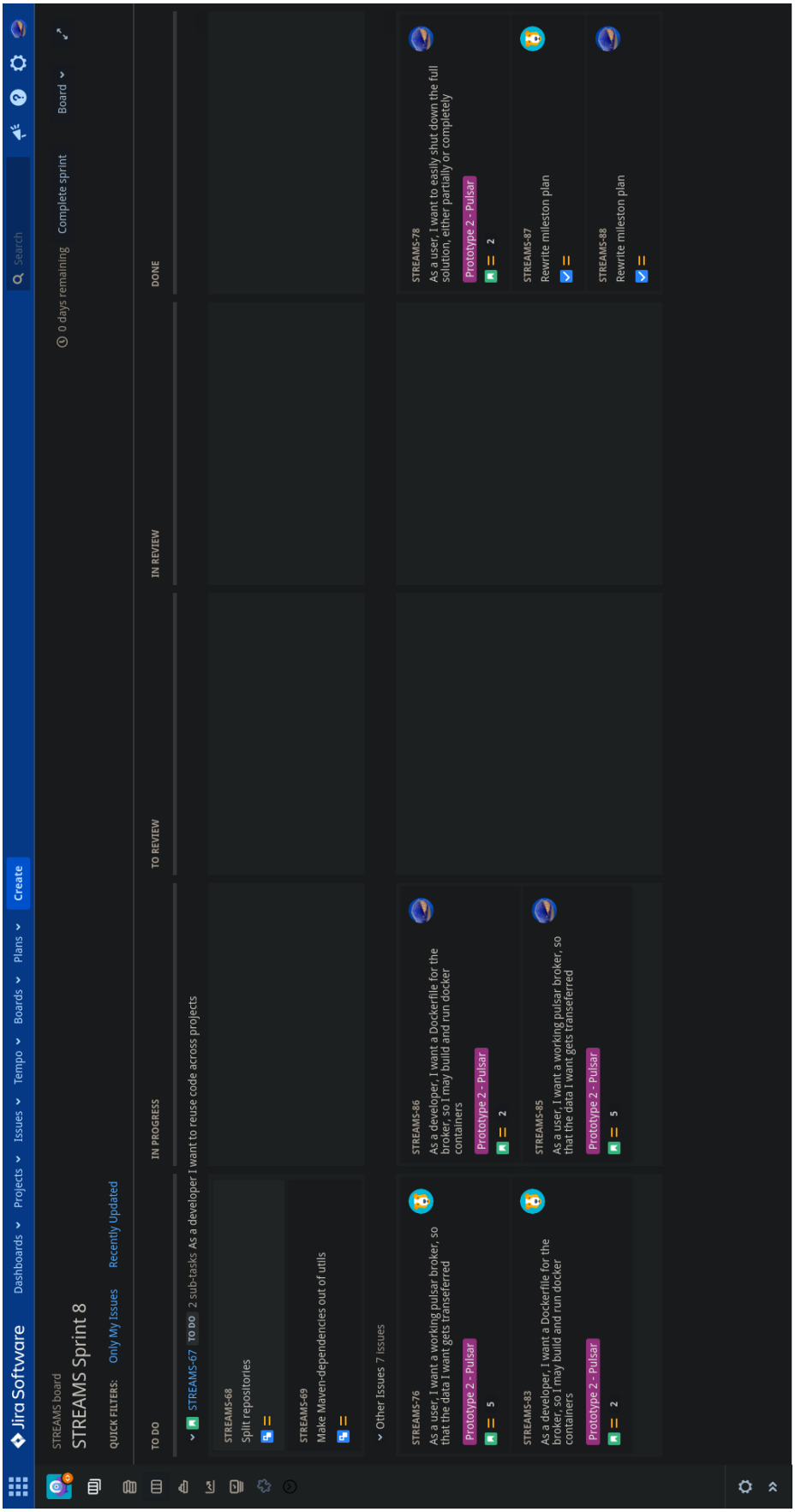
5.51 Sprint 6 skjermdump



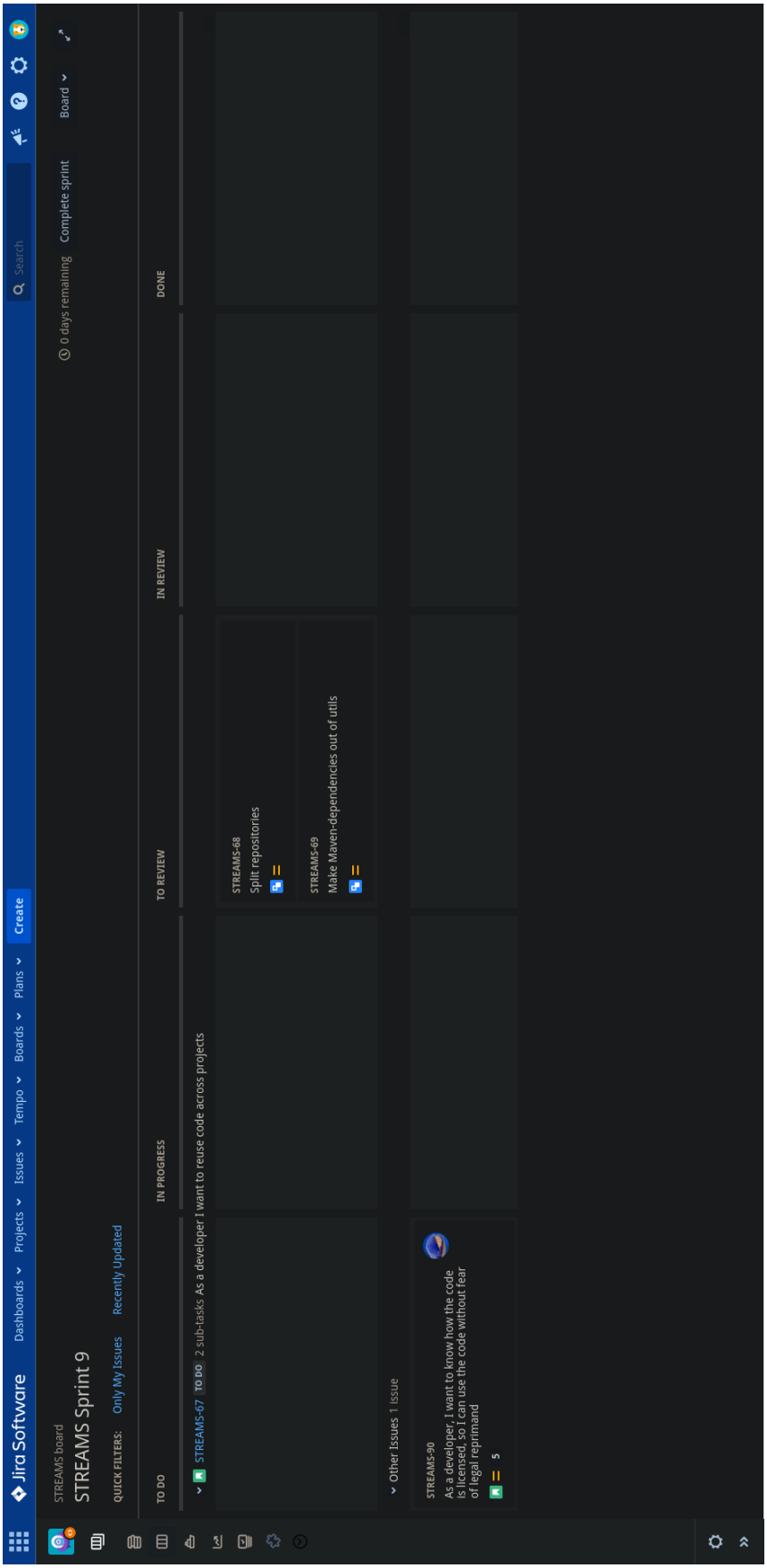
5.52 Sprint 7 skjermdump



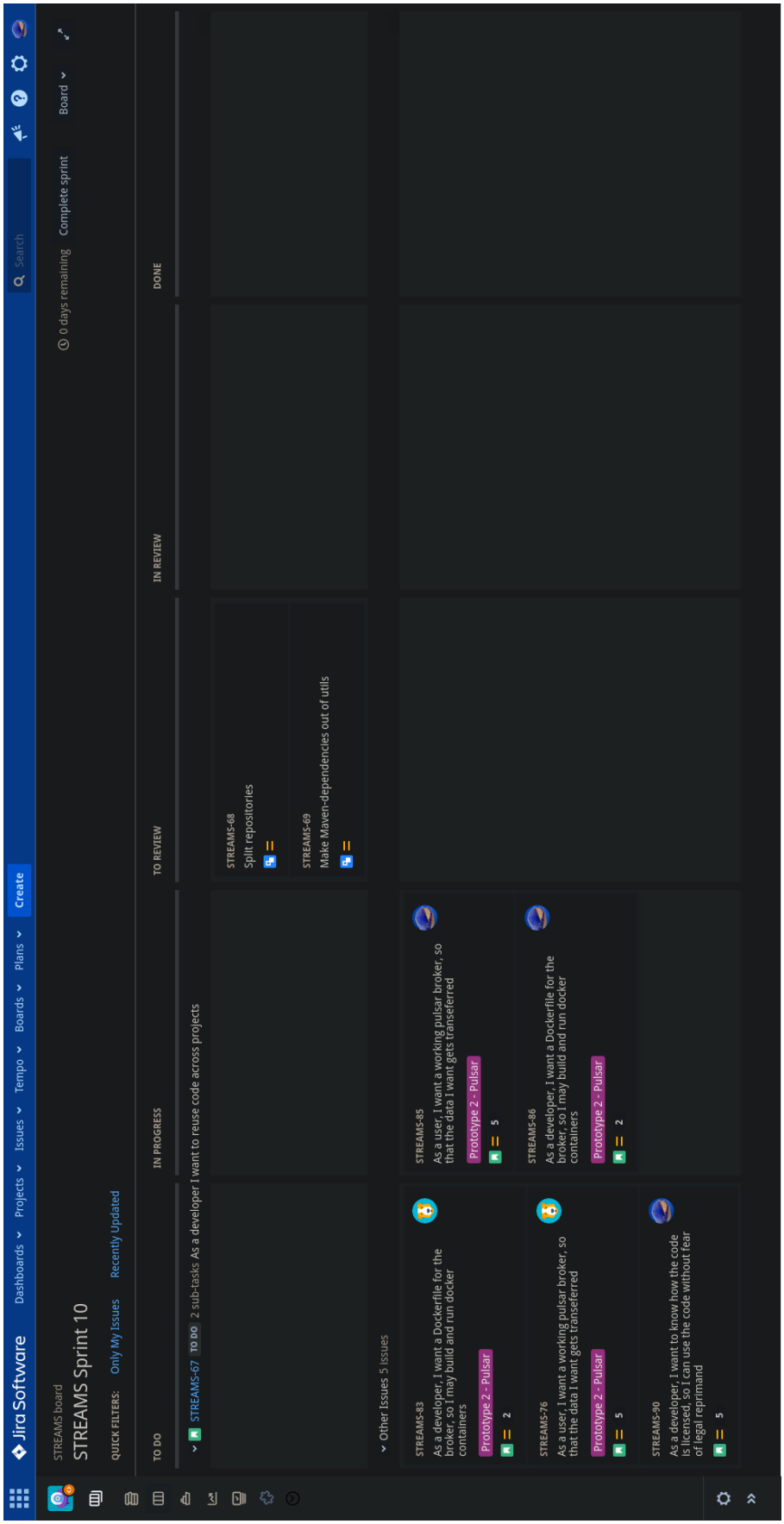
5.53 Sprint 8 skjermdump



5.54 Sprint 9 skjermdump



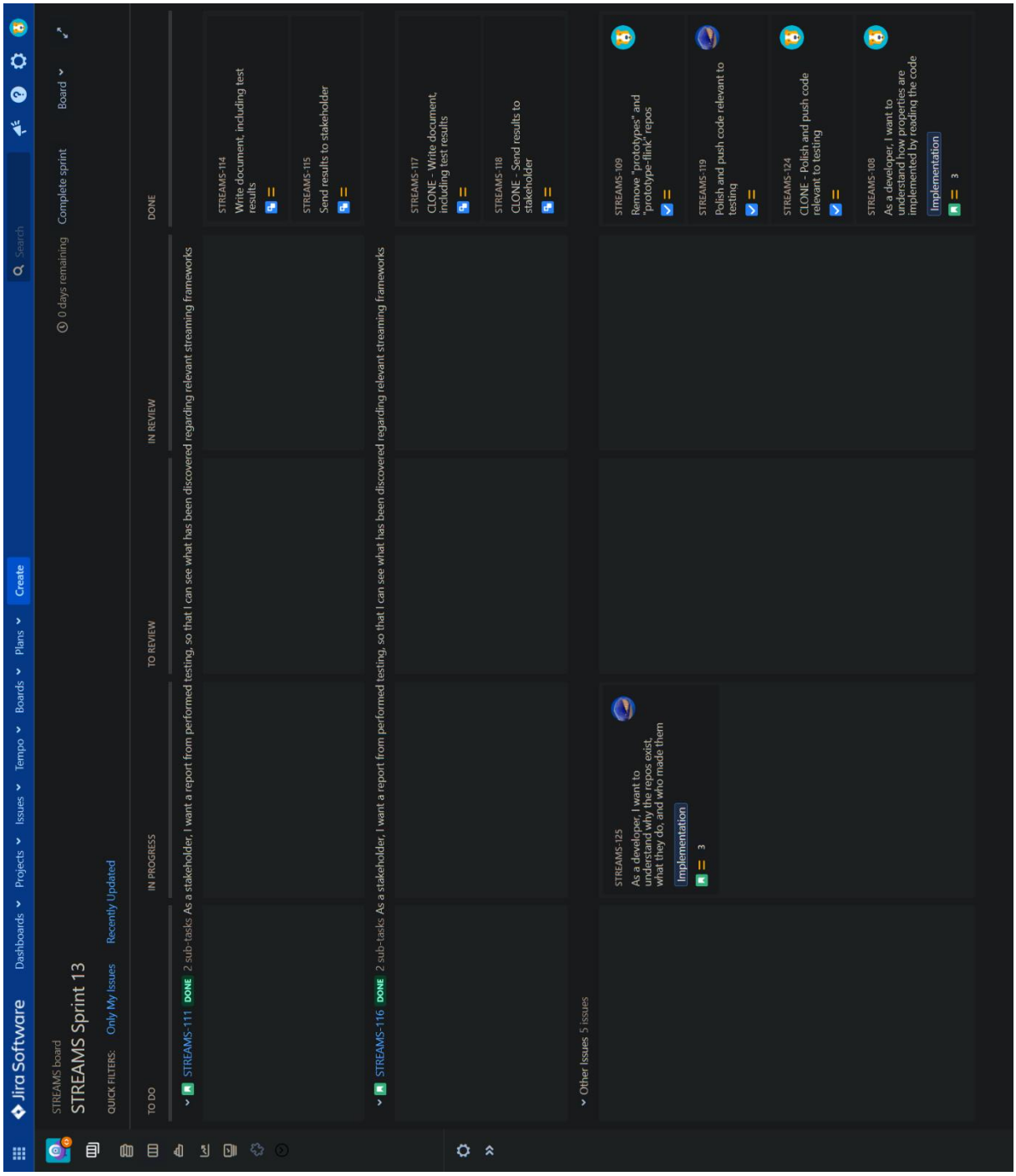
5.55 Sprint 10 skjermdump



5.56 Sprint 11 skjermdump

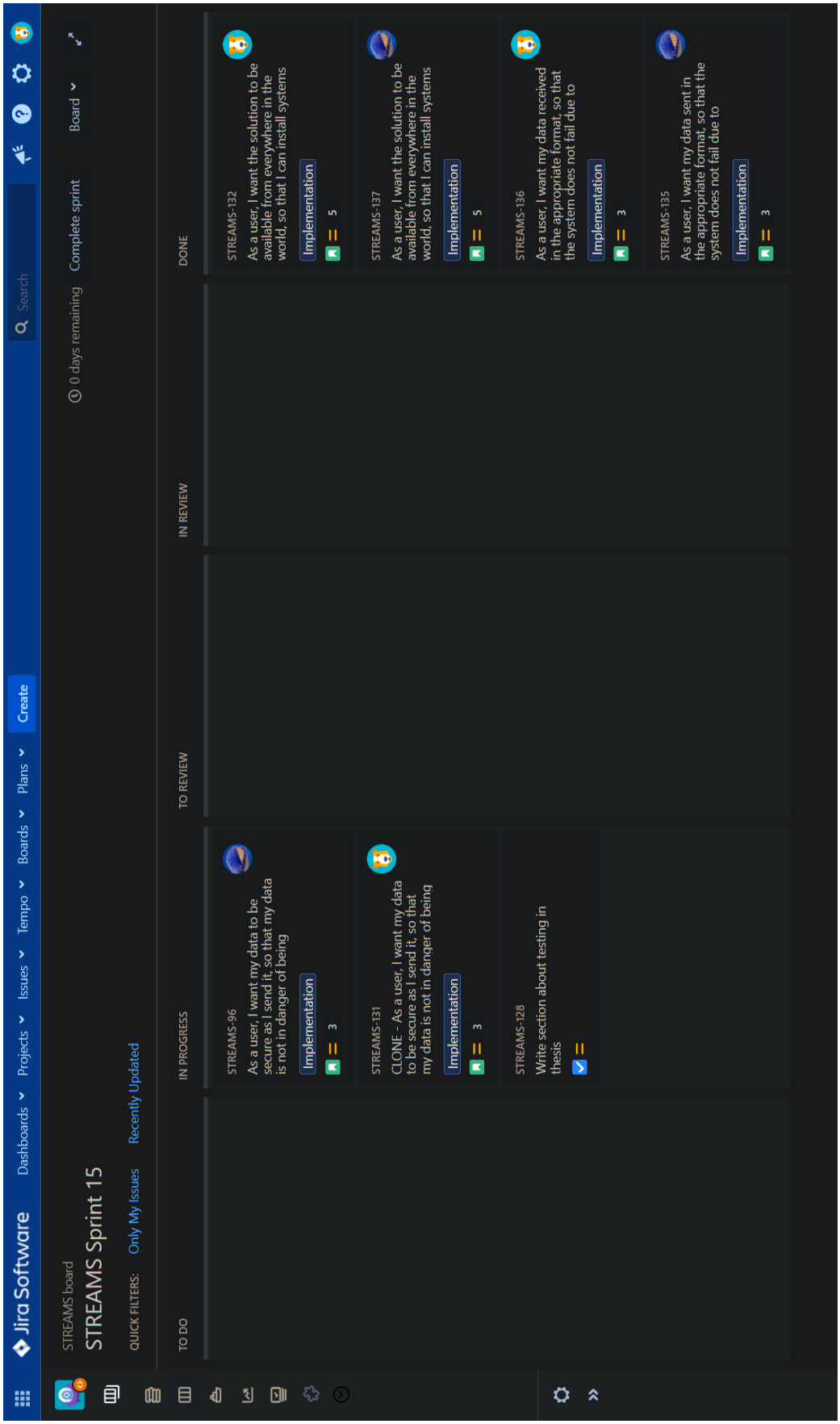
5.57 Sprint 12 skjermdump

5.58 Sprint 13 skjermdump

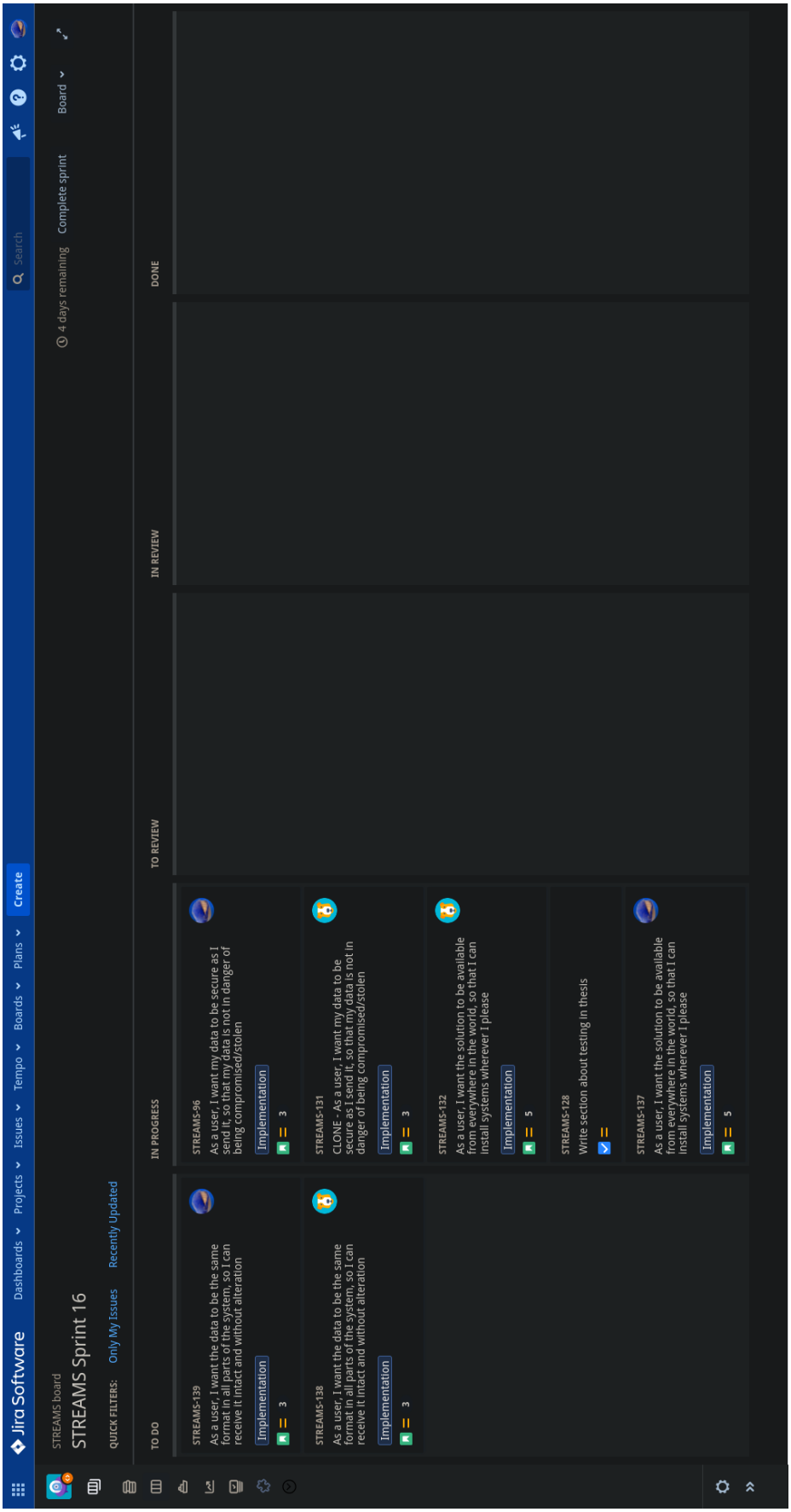


5.59 Sprint 14 skjermdump

5.60 Sprint 15 skjermdump



5.61 Sprint 16 skjermdump



6. Timelister

6.1 Januar

Issue Key	Issue summary	Hours	Work date	Full name	Work Description
STREAMS-14	As a developer, I want to have a plan to reference during development, so that I know what to do during the development process, Tomas	3	2022-1-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-14
STREAMS-14	As a developer, I want to have a plan to reference during development, so that I know what to do during the development process, Tomas	6.5	2022-1-12 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-14
STREAMS-1	As a developer, I want to have a plan to reference during development, so that I know what to do during the development process	6.5	2022-1-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-1
STREAMS-31	TIME-TRACKING, bi-weekly meetings	1	2022-1-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31
STREAMS-31	TIME-TRACKING, bi-weekly meetings	1	2022-1-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-31	TIME-TRACKING, bi-weekly meetings	1	2022-1-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-14	As a developer, I want to have a plan to reference during development, so that	5.5	2022-1-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-14

	I know what to do during the development process, Tomas				
STREAMS-3	GANTT-diagram	1	2022-1-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-3
STREAMS-2	Arbeidskontrakt (Work contract), Lars	3	2022-1-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-2
STREAMS-14	As a developer, I want to have a plan to reference during development, so that I know what to do during the development process, Tomas	4	2022-1-19 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-14
STREAMS-12	Configure Confluence	1	2022-1-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-12
STREAMS-9	Configure Jira	1.5	2022-1-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-9
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-1-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.16666667	2022-1-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-44	TIME-TRACKING, Sprint Planning	2	2022-1-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47

STREAMS-44	TIME-TRACKING, Sprint Planning	2	2022-1-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.16666667	2022-1-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-1-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-9	Configure Jira	0.5	2022-1-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-9
STREAMS-24	Meet with stakeholder to discuss user-needs	0.5	2022-1-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-24
STREAMS-22	Define user-needs	1	2022-1-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-22
STREAMS-22	Define user-needs	1	2022-1-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-22
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-48	TIME-TRACKING, other meetings	1.5	2022-1-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the	1	2022-1-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

	other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-65	TIME-TRACKING, General Documentation	1	2022-1-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-65
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	0.5	2022-1-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-26 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-27	As a developer, I want to have the necessary knowledge to start developing the required application, so that I can complete my tasks and work with purpose	2	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-27
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-17	As a student, I want to have the report ready as soon as possible, so I can write as I work	1	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-17
STREAMS-25	Create Overleaf Document	1	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-25

STREAMS-28	Define user-needs	1	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-22
STREAMS-28	Define user-needs	1	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-22
STREAMS-30	Meet with stakeholder to discuss user-needs	1	2022-1-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-24
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-27 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-17	As a student, I want to have the report ready as soon as possible, so I can write as I work	0.5	2022-1-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-17
STREAMS-47	TIME-TRACKING, Stand-Up	0.5	2022-1-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-22	Define user-needs	1.5	2022-1-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-22
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-1-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-1-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-28 00:00	Lars Ivar Ramberg	Working on issue

					STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-1-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-9	Configure Jira	0.16666667	2022-1-29 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-9
STREAMS-25	Create Overleaf Document	0.16666667	2022-1-29 00:00	Tomas Klungerbo Olsen	Reviewed issue 25 for quality assurance.
STREAMS-16	As a developer, I want to have the necessary knowledge to start developing the required application, so that I can complete my tasks and work with purpose	1	2022-1-30 00:00	Tomas Klungerbo Olsen	Researched Kafka
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-30 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-45	TIME-TRACKING, Sprint Review	2.5	2022-1-30 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.25	2022-1-30 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes	0.16666667	2022-1-30 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19

	report writing, project poster, and compulsory presentations.				
STREAMS-17	As a student, I want to have the report ready as soon as possible, so I can write as I work	1	2022-1-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-17
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.25	2022-1-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	2.5	2022-1-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-1-31 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-31 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-1-31 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.16666667	2022-1-31 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47

6.1.1 Sammendrag

Periode	Lars Ivar Ramberg	Tomas Klungerbo Olsen
Jan 01 - 01 2022	0 timer 0 minutter	0 timer 0 minutter
Jan 02 - 08 2022	0 timer 0 minutter	0 timer 0 minutter
Jan 09 - 15 2022	8 timer 30 minutter	10 timer 30 minutter
Jan 16 - 22 2022	6 timer 30 minutter	9 timer 30 minutter
Jan 23 - 29 2022	17 timer 0 minutter	9 timer 40 minutter
Jan 30 - 31 2022	4 timer 35 minutter	4 timer 45 minutter
Total	**36 timer 35 minutter**	**34 timer 25 minutter**

6.2 Februar

Issue Key	Issue summary	Hours	Work date	Full name	Work Description
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-1 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-1 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-2 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-3 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	1.5	2022-2-3 00:00	Tomas Klungerbo Olsen	Researched common structure/template for technological research finding reports.
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-33	As a stakeholder, I want to learn what the development team has found out about	1.5	2022-2-4 00:00	Tomas Klungerbo Olsen	Researched Pulsar and RabbitMQ

	available technologies, so I can plan for costs and assist in selecting the appropriate technology				
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-4 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	3.5	2022-2-4 00:00	Tomas Klungerbo Olsen	Writing documentation
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-20	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	2.5	2022-2-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-20

STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	1	2022-2-5 00:00	Tomas Klungerbo Olsen	Writing documentation
STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	0.5	2022-2-5 00:00	Tomas Klungerbo Olsen	Writing documentation
STREAMS-20	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	2	2022-2-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-20

STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	1.5	2022-2-6 00:00	Tomas Klungerbo Olsen	Writing documentation
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in selecting the appropriate technology	2.5	2022-2-6 00:00	Tomas Klungerbo Olsen	Writing documentation
STREAMS-33	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan for costs and assist in	4	2022-2-6 00:00	Tomas Klungerbo Olsen	Writing documentation

	selecting the appropriate technology				
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-2-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166666667	2022-2-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-2-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166666667	2022-2-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-2-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-20	As a stakeholder, I want to learn what the development team has found out about available technologies, so I can plan	5	2022-2-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-20

	for costs and assist in selecting the appropriate technology				
STREAMS-44	TIME-TRACKING, Sprint Planning	3	2022-2-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-66	TIME-TRACKING, Collaboration Tools	1	2022-2-7 00:00	Tomas Klungerbo Olsen	Setting up repository hosted on Github
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	3	2022-2-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-8 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-8 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-60	As a developer, I want to have Docker configuration ready for the producer, so that I can spin up containers for prototyping	3	2022-2-9 00:00	Tomas Klungerbo Olsen	Research Docker as a solution to create independent containers. These independent containers will be used to simulate a system of producers and receivers using Kafka.

STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-9 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-48	TIME-TRACKING, other meetings	1	2022-2-9 00:00	Tomas Klungerbo Olsen	Meeting with Saleh and Lars for thesis clarification
STREAMS-48	TIME-TRACKING, other meetings	0.5	2022-2-9 00:00	Tomas Klungerbo Olsen	Meeting with Lars Ivar to further discuss the previous meeting with Saleh
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	4.5	2022-2-9 00:00	Tomas Klungerbo Olsen	Working on LaTeX template - Adding glossary - Adding bibliography and references
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-9 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	4.333333333	2022-2-9 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-10 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-55	As a developer, I want to have a simulated consumer, so	3.5	2022-2-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55

	that I can test the solution				
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-62	As a developer, I want to have Docker configuration ready for the consumer, so that I can spin up containers for prototyping	0.166666667	2022-2-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-62
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	7	2022-2-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-38	As a developer, I want to have a producer generating data during development, so that I can accurately test and assess the solution	4.5	2022-2-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-38

STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-2-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-2-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	4	2022-2-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-62	As a developer, I want to have Docker configuration ready for the consumer, so that I can spin up containers for prototyping	1	2022-2-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-62
STREAMS-62	As a developer, I want to have Docker configuration ready for the consumer, so that I can spin up containers for prototyping	2	2022-2-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-62
STREAMS-55	As a developer, I want to have	4	2022-2-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55

	a simulated consumer, so that I can test the solution				
STREAMS-38	As a developer, I want to have a producer generating data during development, so that I can accurately test and assess the solution	5	2022-2-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-38
STREAMS-47	TIME-TRACKING, Stand-Up	0.5	2022-2-13 00:00	Tomas Klungerbo Olsen	Some problems were discovered and had to be addressed. These problems were the reason for an extended stand-up.
STREAMS-38	As a developer, I want to have a producer generating data during development, so that I can accurately test and assess the solution	4	2022-2-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-38
STREAMS-45	TIME-TRACKING, Sprint Review	2	2022-2-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.5	2022-2-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-44	TIME-TRACKING, Sprint Planning	0.166666667	2022-2-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44

STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	0.166666667	2022-2-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.5	2022-2-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	2	2022-2-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	1	2022-2-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	0.166666667	2022-2-15 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-15 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47

STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-2-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-16 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-2-16 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other	3	2022-2-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

	epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-38	As a developer, I want to have a producer generating data during development, so that I can accurately test and assess the solution	1.5	2022-2-17 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-38
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-17 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-38	As a developer, I want to have a producer generating data during development, so that I can accurately test and assess the solution	2.5	2022-2-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-38
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-38	As a developer, I want to have	2	2022-2-19 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-38

	a producer generating data during development, so that I can accurately test and assess the solution				
STREAMS-65	TIME-TRACKING, General Documentation	2	2022-2-20 00:00	Tomas Klungerbo Olsen	Add meeting notes Add timelog to jira timesheets
STREAMS-60	As a developer, I want to have Docker configuration ready for the producer, so that I can spin up containers for prototyping	1.5	2022-2-20 00:00	Tomas Klungerbo Olsen	Removed maven wrapper dependency Improved build size and time
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-20 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-2-20 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166666667	2022-2-20 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-48	TIME-TRACKING, other meetings	0.166666667	2022-2-20 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-48
STREAMS-38	As a developer, I want to have a producer generating data during development,	2	2022-2-20 00:00	Tomas Klungerbo Olsen	Added JavaDoc and updated readme files.

	so that I can accurately test and assess the solution				
STREAMS-66	TIME-TRACKING, Collaboration Tools	1.5	2022-2-20 00:00	Tomas Klungerbo Olsen	Looked into the possibility of separating the project into separate repository and created a diagram of the idea. The purpose is easy re-use of shared code by intended extension.
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166666667	2022-2-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-2-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-2-21 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-21 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	2	2022-2-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55

STREAMS-62	As a developer, I want to have Docker configuration ready for the consumer, so that I can spin up containers for prototyping	0.5	2022-2-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-62
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	1	2022-2-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-2-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-71	As a developer, I want to have a document to guide me in my coding style, so everyone codes similarly to increase readability	3	2022-2-22 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-71
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	0.5	2022-2-22 00:00	Tomas Klungerbo Olsen	Review consumer
STREAMS-74	TIME-TRACKING, Hotfixes	0.5	2022-2-22 00:00	Tomas Klungerbo Olsen	Hotfixes

STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-22 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	2	2022-2-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-70	As a developer, I want to have a document to guide me in my coding style, so everyone codes similarly to increase readability	1	2022-2-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-70
STREAMS-70	As a developer, I want to have a document to guide me in my coding style, so everyone codes similarly to increase readability	2	2022-2-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-70
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-61	As a developer, I want to have	0.5	2022-2-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-61

	Docker configuration ready for the broker, so that I can spin up containers for prototyping				
STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and possibly reuse the code	0.5	2022-2-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-73
STREAMS-54	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	2	2022-2-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-54
STREAMS-61	As a developer, I want to have Docker configuration ready for the broker, so that I can spin up containers for prototyping	1.5	2022-2-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-61
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify	2	2022-2-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

	into the other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	3	2022-2-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-63	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	4.5	2022-2-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-63
STREAMS-70	As a developer, I want to have a document to guide me in my coding style, so everyone codes similarly to increase readability	3	2022-2-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-70
STREAMS-54	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	2.5	2022-2-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-54
STREAMS-61	As a developer, I want to have	3.5	2022-2-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-61

	Docker configuration ready for the broker, so that I can spin up containers for prototyping				
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-63	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	6	2022-2-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-63
STREAMS-62	As a developer, I want to have Docker configuration ready for the consumer, so that I can spin up containers for prototyping	0.5	2022-2-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-62
STREAMS-61	As a developer, I want to have Docker configuration ready for the broker, so that I can spin up containers for prototyping	8	2022-2-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-61
STREAMS-65	TIME-TRACKING, General	2	2022-2-25 00:00	Tomas Klungerbo Olsen	Create diagram for Kafka prototype architecture flow

	Documentation				
STREAMS-66	TIME-TRACKING, Collaboration Tools	1.5	2022-2-25 00:00	Tomas Klungerbo Olsen	Add sub modules and repositories for prototypes
STREAMS-48	TIME-TRACKING, other meetings	0.5	2022-2-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-48
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-2-25 00:00	Tomas Klungerbo Olsen	Demo of Kafka prototype
STREAMS-61	As a developer, I want to have Docker configuration ready for the broker, so that I can spin up containers for prototyping	4	2022-2-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-61
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-63	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	0.5	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-63
STREAMS-19	All work strictly related to the	2	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

	bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-63	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	0.5	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-63
STREAMS-48	TIME-TRACKING, other meetings	0.5	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-63	As a user, I want my data to be stored, so that I may consume it elsewhere in my system	2	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-63
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	0.5	2022-2-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55
STREAMS-61	As a developer, I want to have Docker configuration ready for the	3.5	2022-2-26 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-61

	broker, so that I can spin up containers for prototyping				
STREAMS-61	As a developer, I want to have Docker configuration ready for the broker, so that I can spin up containers for prototyping	1	2022-2-26 00:00	Tomas Klungerbo Olsen	Review
STREAMS-61	As a developer, I want to have Docker configuration ready for the broker, so that I can spin up containers for prototyping	13	2022-2-27 00:00	Tomas Klungerbo Olsen	Broker and graceful shutdown script
STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and possibly reuse the code	2	2022-2-27 00:00	Tomas Klungerbo Olsen	Javadoc
STREAMS-66	TIME-TRACKING, Collaboration Tools	1	2022-2-27 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-66
STREAMS-66	TIME-TRACKING, Collaboration Tools	1.5	2022-2-27 00:00	Tomas Klungerbo Olsen	Utils as maven dependency

STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-27 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-2-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and possibly reuse the code	2	2022-2-28 00:00	Tomas Klungerbo Olsen	Javadoc
STREAMS-66	TIME-TRACKING, Collaboration Tools	1	2022-2-28 00:00	Tomas Klungerbo Olsen	Dataprovider as submodule
STREAMS-78	As a user, I want to easily shut down the full solution, either partially or completely	0.5	2022-2-28 00:00	Tomas Klungerbo Olsen	Gracefully shutdown script
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.5	2022-2-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-44	TIME-TRACKING, Sprint Planning	1	2022-2-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166666667	2022-2-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47

STREAMS-84	As a user, I want to be able to start the entire solution in a fast, easy to understand way	2	2022-2-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-84
STREAMS-44	TIME-TRACKING, Sprint Planning	1	2022-2-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.5	2022-2-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-2-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-55	As a developer, I want to have a simulated consumer, so that I can test the solution	4	2022-2-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-55

6.2.1 sammendrag

Periode	Lars Ivar Ramberg	Tomas Klungerbo Olsen
Feb 01 - 05 2022	5 timer 10 minutter	8 timer 40 minutter
Feb 06 - 12 2022	38 timer 50 minutter	28 timer 10 minutter
Feb 13 - 19 2022	9 timer 40 minutter	21 timer 40 minutter
Feb 20 - 26 2022	37 timer 20 minutter	45 timer 30 minutter
Feb 27 - 28 2022	8 timer 20 minutter	23 timer 20 minutter
Total	**99 timer 20 minutter**	**127 timer 20 minutter**

6.3 Mars

Issue Key	Issue summary	Hours	Work date	Full name	Work Description
STREAMS-66	TIME-TRACKING, Collaboration Tools	1	2022-3-1 00:00	Tomas Klungerbo Olsen	Git repository structure
STREAMS-44	TIME-TRACKING, Sprint Planning	1	2022-3-1 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-1 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-1 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.5	2022-3-2 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and possibly reuse the code	1	2022-3-3 00:00	Tomas Klungerbo Olsen	Javadoc
STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and possibly reuse the code	0.5	2022-3-3 00:00	Tomas Klungerbo Olsen	GitHub pages
STREAMS-66	TIME-TRACKING, Collaboration Tools	1	2022-3-3 00:00	Tomas Klungerbo Olsen	GitHub repository structure

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-3 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-4 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-84	As a user, I want to be able to start the entire solution in a fast, easy to understand way	0.5	2022-3-5 00:00	Tomas Klungerbo Olsen	Review
STREAMS-77	As a developer i want a consumer to extract data from the Pulsar broker, so that I may verify that Pulsar sends data accurately, and that data arrives safely	1	2022-3-6 00:00	Tomas Klungerbo Olsen	Review
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-3-6 00:00	Tomas Klungerbo Olsen	Thesis writing
STREAMS-86	As a developer, I want a Dockerfile for the broker, so I may build and run docker containers	0.5	2022-3-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-86

STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and possibly reuse the code	2.5	2022-3-6 00:00	Tomas Klungerbo Olsen	Javadoc gen
STREAMS-75	As a developer, I want simulated data to reach the Pulsar broker, so that I may see how Pulsar receives data	4	2022-3-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-75
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-77	As a developer i want a consumer to extract data from the Pulsar broker, so that I may verify that Pulsar sends data accurately, and that data arrives safely	6.5	2022-3-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-77
STREAMS-84	As a user, I want to be able to start the entire solution in a fast, easy to understand way	1	2022-3-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-84
STREAMS-75	As a developer, I want simulated data to reach the Pulsar broker, so that I may see how Pulsar receives data	1.5	2022-3-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-75
STREAMS-73	As a developer, I want to have a wiki with documentation, so that I can read, understand, and	0.166667	2022-3-6 00:00	Lars Ivar Ramberg	REVIEW

	possibly reuse the code				
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-3-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-3-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-3-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-77	As a developer i want a consumer to extract data from the Pulsar broker, so that I may verify that Pulsar sends data accurately, and that data arrives safely	1.5	2022-3-7 00:00	Tomas Klungerbo Olsen	Review
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-3-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-3-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	1	2022-3-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-77	As a developer i want a consumer to	2	2022-3-7 00:00	Lars Ivar Ramberg	Working on issue

	extract data from the Pulsar broker, so that I may verify that Pulsar sends data accurately, and that data arrives safely				STREAMS-77
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-3-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-3-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3	2022-3-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-3-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-3-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.166667	2022-3-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45

STREAMS-65	TIME-TRACKING, General Documentation	0.5	2022-3-14 00:00	Tomas Klungerbo Olsen	Creating new milestone plan
STREAMS-78	As a user, I want to easily shut down the full solution, either partially or completely	3	2022-3-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-78
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-3-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-3-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.166667	2022-3-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-87	Rewrite mileston plan	0.5	2022-3-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-87
STREAMS-78	As a user, I want to easily shut down the full solution, either partially or completely	1	2022-3-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-78
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47

STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-3-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.166667	2022-3-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-48	TIME-TRACKING, other meetings	1	2022-3-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-48
STREAMS-44	TIME-TRACKING, Sprint Planning	0.166667	2022-3-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	0.166667	2022-3-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-3-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.166667	2022-3-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-48	TIME-TRACKING, other meetings	1	2022-3-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	4	2022-3-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-85
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-3-25 00:00	Tomas Klungerbo Olsen	Demo session

					Sprint 8-9 [1/2]
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-3-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	4	2022-3-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-85
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	6	2022-3-26 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-85
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	8	2022-3-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-85
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	3.5	2022-3-27 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-85
STREAMS-74	TIME-TRACKING, Hotfixes	3	2022-3-27 00:00	Tomas Klungerbo Olsen	Fix data provider racing issues
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-27 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	4	2022-3-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-85
STREAMS-85	As a user, I want a working pulsar	6	2022-3-27 00:00	Lars Ivar Ramberg	Working on issue

	broker, so that the data I want gets transeferred				STREAMS-85
STREAMS-65	TIME-TRACKING, General Documentation	0.5	2022-3-28 00:00	Tomas Klungerbo Olsen	Update meeting and demo session notes
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.666667	2022-3-28 00:00	Tomas Klungerbo Olsen	Demo session Sprint 8-9 [2/2]
STREAMS-65	TIME-TRACKING, General Documentation	1	2022-3-28 00:00	Tomas Klungerbo Olsen	Updating timesheets
STREAMS-90	As a developer, I want to know how the code is licensed, so I can use the code without fear of legal reprimand	1	2022-3-28 00:00	Tomas Klungerbo Olsen	Research and add license to repositories
STREAMS-76	As a user, I want a working pulsar broker, so that the data I want gets transeferred	2	2022-3-28 00:00	Tomas Klungerbo Olsen	Review
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-3-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.5	2022-3-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-48	TIME-TRACKING, other meetings	1	2022-3-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-48
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.666667	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue

					STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-48	TIME-TRACKING, other meetings	1	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.5	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-85	As a user, I want a working pulsar broker, so that the data I want gets transeferred	1.5	2022-3-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-85
STREAMS-90	As a developer, I want to know how the code is licensed, so I can use the code without fear of legal reprimand	0.166667	2022-3-28 00:00	Lars Ivar Ramberg	REVIEW
STREAMS-44	TIME-TRACKING, Sprint Planning	2	2022-3-29 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-29 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	2	2022-3-29 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-29 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-107	CLONE - As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	3	2022-3-30 00:00	Tomas Klungerbo Olsen	Setting up virtual machine on a server
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-30 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-3-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-103	CLONE - As a developer, I want to have formalized criteria for testing, so that I know what needs to be tested, and what constitutes failure and success	1	2022-3-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-103
STREAMS-100	As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	2	2022-3-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-100

6.3.1 sammendrag

Periode	Lars Ivar Ramberg	Tomas Klungerbo Olsen
Mar 01 - 05 2022	0 timer 40 minutter	6 timer 0 minutter
Mar 06 - 12 2022	16 timer 50 minutter	14 timer 10 minutter
Mar 13 - 19 2022	2 timer 30 minutter	4 timer 30 minutter
Mar 20 - 26 2022	14 timer 10 minutter	12 timer 10 minutter
Mar 27 - 31 2022	22 timer 0 minutter	19 timer 20 minutter
Total	**56 timer 10 minutter**	**56 timer 10 minutter**

6.4 April

Issue Key	Issue summary	Hours	Work date	Full name	Work Description
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	4	2022-4-2 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-4-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-107	CLONE - As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	5	2022-4-3 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-107
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	4.5	2022-4-3 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-3 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-100	As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	6	2022-4-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-100
STREAMS-140	TIME-TRACKING, Code improvements	3.5	2022-4-4 00:00	Tomas Klungerbo Olsen	Testing Docker Compose optimization
STREAMS-140	TIME-TRACKING, Code improvements	6	2022-4-4 00:00	Tomas Klungerbo Olsen	Make Data provider a dependency
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-4 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-141	TIME-TRACKING, Refactoring	1	2022-4-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-141
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3	2022-4-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-5 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-140	TIME-TRACKING, Code improvements	3.5	2022-4-5 00:00	Tomas Klungerbo Olsen	Kafka data provider as dependency

STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-4-5 00:00	Tomas Klungerbo Olsen	Structure and reading NTNU templates
STREAMS-107	CLONE - As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	1	2022-4-5 00:00	Tomas Klungerbo Olsen	Server configuration
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-5 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-5 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-4-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47

STREAMS-100	As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	1	2022-4-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-100
STREAMS-106	CLONE - As a developer I want to have a robust and well tested framework, that I can be sure works over the internet	2	2022-4-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-106
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-6 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-100	As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	4.5	2022-4-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-100
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-7 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-100	As a developer, I want servers set up for my to test on, so that I may perform necessary network-dependent testing	4	2022-4-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-100
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-100	As a developer, I want servers set up for my to test on, so that I may perform necessary	0.5	2022-4-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-100

	network-dependent testing				
STREAMS-106	CLONE - As a developer I want to have a robust and well tested framework, that I can be sure works over the internet	3.5	2022-4-8 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-106
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-4-8 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-8 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-4-8 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-8 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-95	As a developer, I want to stress-test the solution, so I can be sure that it meets the load requirements from the stakeholder	4.5	2022-4-8 00:00	Lars Ivar Ramberg	Working on issue STREAMS-95
STREAMS-106	CLONE - As a developer I want to have a robust and well tested framework, that I can be sure works over the internet	2.5	2022-4-9 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-106
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	8.5	2022-4-10 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116

STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-10 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-10 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	3	2022-4-10 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-10 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-94	As a developer I want to have a robust and well tested framework, that I can be sure works over the internet	1	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-94
STREAMS-94	As a developer I want to have a robust and well tested framework, that I can be sure works over the internet	1	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-94
STREAMS-92	As a user, I want to to have fault tolerance, so that I don't lose data if	1	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-92

	parts of the solution fail. As a developer, I want to test the fault tolerance				
STREAMS-95	As a developer, I want to stress-test the solution, so I can be sure that it meets the load requirements from the stakeholder	3.5	2022-4-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-95
STREAMS-44	TIME-TRACKING, Sprint Planning	3	2022-4-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	4.5	2022-4-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	5	2022-4-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-11 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report	0.5	2022-4-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

	writing, project poster, and compulsory presentations.				
STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	7	2022-4-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111
STREAMS-44	TIME-TRACKING, Sprint Planning	3	2022-4-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-12 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	4	2022-4-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	3.5	2022-4-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-13 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47

STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	3.5	2022-4-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	1.5	2022-4-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-142	TIME-TRACKING, Research	6.5	2022-4-14 00:00	Tomas Klungerbo Olsen	More in depth Pulsar research
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	10	2022-4-14 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	10	2022-4-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-15 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	8.5	2022-4-15 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	7.5	2022-4-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111
STREAMS-124	CLONE - Polish and push code relevant to testing	1	2022-4-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-124
STREAMS-119	Polish and push code relevant to testing	0.166667	2022-4-16 00:00	Lars Ivar Ramberg	REVIEW
STREAMS-124	CLONE - Polish and push code relevant to testing	1	2022-4-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-124
STREAMS-141	TIME-TRACKING, Refactoring	1.5	2022-4-17 00:00	Tomas Klungerbo Olsen	Add testing branches to main project
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-17 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47

STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	3	2022-4-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	1.5	2022-4-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-108
STREAMS-124	CLONE - Polish and push code relevant to testing	2	2022-4-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-124
STREAMS-141	TIME-TRACKING, Refactoring	1	2022-4-18 00:00	Tomas Klungerbo Olsen	Review testing branches
STREAMS-116	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	5	2022-4-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-116
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-4-18 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	1.5	2022-4-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-108

STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-4-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-111	As a stakeholder, I want a report from performed testing, so that I can see what has been discovered regarding relevant streaming frameworks	3	2022-4-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-111
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-19 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-19 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	1	2022-4-19 00:00	Lars Ivar Ramberg	Working on issue STREAMS-108
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3.5	2022-4-20 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-20 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-4-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-127	Settle on form and structure for thesis	2.5	2022-4-20 00:00	Lars Ivar Ramberg	Working on issue STREAMS-127
STREAMS-99	As a user, I want to both stream data, and send/receive in batches	3.5	2022-4-21 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-99
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-4-21 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-48	TIME-TRACKING, other meetings	1	2022-4-21 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-48
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-21 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-48	TIME-TRACKING, other meetings	0.5	2022-4-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48

STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-4-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-48	TIME-TRACKING, other meetings	1	2022-4-21 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	7	2022-4-22 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-22 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-4-22 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-4-22 00:00	Tomas Klungerbo Olsen	Requirement documentation
STREAMS-96	As a user, I want my data to be secure as I send it, so that my data is	4	2022-4-22 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-96

	not in danger of being compromised/stolen				
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-4-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-131	CLONE - As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	4	2022-4-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-131
STREAMS-48	TIME-TRACKING, other meetings	0.5	2022-4-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3	2022-4-22 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-99	As a user, I want to both stream data, and send/receive in batches	3	2022-4-23 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-99
STREAMS-129	As a developer, I want to be prepared for implementing my solution on Azure, so that I am ready when implementation starts	3	2022-4-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-129

STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	6.5	2022-4-23 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-48	TIME-TRACKING, other meetings	2	2022-4-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-48
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-4-24 00:00	Tomas Klungerbo Olsen	Requirement documentation
STREAMS-99	As a user, I want to both stream data, and send/receive in batches	5.5	2022-4-24 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-99
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	2.5	2022-4-24 00:00	Tomas Klungerbo Olsen	Review
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	3	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-108

STREAMS-129	As a developer, I want to be prepared for implementing my solution on Azure, so that I am ready when implementation starts	5	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-129
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	0.5	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-108
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-48	TIME-TRACKING, other meetings	2	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-108	As a developer, I want to understand how properties are implemented by reading the code	1	2022-4-24 00:00	Lars Ivar Ramberg	Working on issue STREAMS-108
STREAMS-96	As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	4.5	2022-4-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-96
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-4-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-31

STREAMS-65	TIME-TRACKING, General Documentation	4	2022-4-25 00:00	Tomas Klungerbo Olsen	Power point presentation
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-46
STREAMS-44	TIME-TRACKING, Sprint Planning	1	2022-4-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-44
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-25 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-44	TIME-TRACKING, Sprint Planning	1	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-48	TIME-TRACKING, other meetings	3	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS-131	CLONE - As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	4	2022-4-25 00:00	Lars Ivar Ramberg	Working on issue STREAMS-131
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-26 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-26 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-65	TIME-TRACKING, General Documentation	7	2022-4-27 00:00	Tomas Klungerbo Olsen	Domain Diagram
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-27 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3.5	2022-4-27 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-28 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-131	CLONE - As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	1.5	2022-4-28 00:00	Lars Ivar Ramberg	Working on issue STREAMS-131
STREAMS-65	TIME-TRACKING, General Documentation	0.5	2022-4-29 00:00	Tomas Klungerbo Olsen	Domain diagram
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the	3.5	2022-4-29 00:00	Tomas Klungerbo Olsen	Requirement documentation

	other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-4-29 00:00	Tomas Klungerbo Olsen	System documentation
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-29 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-4-29 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3.5	2022-4-29 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	0.5	2022-4-29 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	0.5	2022-4-30 00:00	Tomas Klungerbo Olsen	Working on issue STREAMS-137
STREAMS-135	As a user, I want my data sent in the appropriate format, so that the system does not fail due to circumstances beyond my control	6	2022-4-30 00:00	Tomas Klungerbo Olsen	Byte array
STREAMS-65	TIME-TRACKING, General Documentation	1.5	2022-4-30 00:00	Tomas Klungerbo Olsen	Venn diagram
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-136	As a user, I want my data received in the appropriate format, so that the system does not fail due to circumstances beyond my control	0.5	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-136
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -136	As a user, I want my data received in the appropriate format, so that the system does not fail due to circumstances beyond my control	0.5	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-136
STREAMS -132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	3	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1	2022-4-30 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

6.4.1 sammendrag

Periode	Lars Ivar Ramberg	Tomas Klungerbo Olsen
Apr 01 - 02 2022	1 timer 0 minutter	4 timer 0 minutter
Apr 03 - 09	27 timer 40 minutter	36 timer 10 minutter

2022		
Apr 10 - 16 2022	45 timer 50 minutter	55 timer 40 minutter
Apr 17 - 23 2022	39 timer 0 minutter	37 timer 0 minutter
Apr 24 - 30 2022	41 timer 40 minutter	45 timer 10 minutter
Total	**155 timer 10 minutter**	**178 timer 0 minutter**

6.5 Mai

Issue Key	Issue summary	Hours	Work date	Full name	Work Description
STREAMS-135	As a user, I want my data sent in the appropriate format, so that the system does not fail due to circumstances beyond my control	1	2022-5-1 00:00	Tomas Klungero Olsen	Working on issue STREAMS-135
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	8.5	2022-5-1 00:00	Tomas Klungero Olsen	Working on issue STREAMS-137
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-1 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-1 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-5-1 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	8.5	2022-5-1 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS-65	TIME-TRACKING, General Documentation	0.5	2022-5-2 00:00	Tomas Klungero Olsen	Updating timesheet
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-5-2 00:00	Tomas Klungero Olsen	Working on issue STREAMS-45
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-5-2 00:00	Tomas Klungero Olsen	Working on issue STREAMS-46
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-5-2 00:00	Tomas Klungero Olsen	Working on issue STREAMS-44
STREAMS-137	As a user, I want the solution to be available from	8.5	2022-5-2 00:00	Tomas Klungero Olsen	Working on issue STREAMS-137

	everywhere in the world, so that I can install systems wherever I please				
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-5-2 00:00	Tomas Klungero Olsen	System documentation
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-2 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1.5	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	3.5	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS-44	TIME-TRACKING, Sprint Planning	0.5	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS-46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	4	2022-5-2 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132

STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	6	2022-5-3 00:00	Tomas Klungero Olsen	System documentation
STREAMS -137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	3.5	2022-5-3 00:00	Tomas Klungero Olsen	Working on issue STREAMS-137
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-3 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS -138	As a user, I want the data to be the same format in all parts of the system, so I can receive it intact and without alteration	3.5	2022-5-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-138
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	5	2022-5-3 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1.5	2022-5-4 00:00	Tomas Klungero Olsen	Requirement documentation
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-4 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47

STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	6	2022-5-4 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-141	TIME-TRACKING, Refactoring	3.5	2022-5-5 00:00	Tomas Klungero Olsen	Add missing comments to projects
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	6.5	2022-5-5 00:00	Tomas Klungero Olsen	Working on issue STREAMS-137
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-5 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	5	2022-5-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS-138	As a user, I want the data to be the same format in all parts of the system, so I can receive it intact and without alteration	2.5	2022-5-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-138
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	7	2022-5-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	3	2022-5-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	4	2022-5-5 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	4.5	2022-5-6 00:00	Tomas Klungero Olsen	Working on issue STREAMS-137
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-5-6 00:00	Tomas Klungero Olsen	Working on issue STREAMS-31
STREAMS-141	TIME-TRACKING, Refactoring	2	2022-5-6 00:00	Tomas Klungero Olsen	Improve producer code structure
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-6 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-31	TIME-TRACKING, bi-weekly meetings	0.5	2022-5-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-31
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-132	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	5	2022-5-6 00:00	Lars Ivar Ramberg	Working on issue STREAMS-132
STREAMS-141	TIME-TRACKING, Refactoring	3	2022-5-7 00:00	Tomas Klungero Olsen	Improve code structure
STREAMS-141	TIME-TRACKING, Refactoring	0.5	2022-5-7 00:00	Tomas Klungero Olsen	Update README files
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-7 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can	5.5	2022-5-7 00:00	Tomas Klungero Olsen	Azure cluster

	install systems wherever I please				
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	4	2022-5-7 00:00	Tomas Klungero Olsen	Azure install script
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-131	CLONE - As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	8.5	2022-5-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-131
STREAMS-141	TIME-TRACKING, Refactoring	1.5	2022-5-7 00:00	Lars Ivar Ramberg	Working on issue STREAMS-141
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	5	2022-5-8 00:00	Tomas Klungero Olsen	Azure install script
STREAMS-137	As a user, I want the solution to be available from everywhere in the world, so that I can install systems wherever I please	5.5	2022-5-8 00:00	Tomas Klungero Olsen	Azure install script
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-8 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-8 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-131	CLONE - As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	10	2022-5-8 00:00	Lars Ivar Ramberg	Working on issue STREAMS-131
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics.	1	2022-5-9 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19

	Includes report writing, project poster, and compulsory presentations.				
STREAMS-96	As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	6.5	2022-5-9 00:00	Tomas Klungero Olsen	Working on issue STREAMS-96
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-9 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-9 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	8	2022-5-9 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-131	CLONE - As a user, I want my data to be secure as I send it, so that my data is not in danger of being compromised/stolen	6	2022-5-9 00:00	Lars Ivar Ramberg	Working on issue STREAMS-131
STREAMS-140	TIME-TRACKING, Code improvements	2.5	2022-5-10 00:00	Tomas Klungero Olsen	Add example section for pulsar implementation repository
STREAMS-140	TIME-TRACKING, Code improvements	1	2022-5-10 00:00	Tomas Klungero Olsen	Assisting review of example implementation
STREAMS-141	TIME-TRACKING, Refactoring	6	2022-5-10 00:00	Tomas Klungero Olsen	Updating readmes and creating releases for repositories
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-10 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47

STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	8	2022-5-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -141	TIME-TRACKING, Refactoring	6	2022-5-10 00:00	Lars Ivar Ramberg	Working on issue STREAMS-141
STREAMS -45	TIME-TRACKING, Sprint Review	0.5	2022-5-11 00:00	Tomas Klungero Olsen	Working on issue STREAMS-45
STREAMS -46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-5-11 00:00	Tomas Klungero Olsen	Working on issue STREAMS-46
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	4.5	2022-5-11 00:00	Tomas Klungero Olsen	System documentation
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-11 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2.5	2022-5-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -46	TIME-TRACKING, Sprint Retrospective	0.166667	2022-5-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-46
STREAMS -48	TIME-TRACKING, other meetings	0.166667	2022-5-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48

STREAMS-45	TIME-TRACKING, Sprint Review	0.5	2022-5-11 00:00	Lars Ivar Ramberg	Working on issue STREAMS-45
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	3.5	2022-5-12 00:00	Tomas Klungero Olsen	System documentation
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-12 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS-47	TIME-TRACKING, Stand-Up	0.166667	2022-5-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	4	2022-5-12 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	0.5	2022-5-13 00:00	Tomas Klungero Olsen	System documentation
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-13 00:00	Tomas Klungero Olsen	Thesis and system documentation
STREAMS-65	TIME-TRACKING, General Documentation	1	2022-5-13 00:00	Tomas Klungero Olsen	Updating meeting notes

STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	5	2022-5-13 00:00	Tomas Klungero Olsen	Project manual
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-13 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-13 00:00	Tomas Klungero Olsen	Working on issue STREAMS-47
STREAMS -47	TIME-TRACKING, Stand-Up	0.166667	2022-5-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-47
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	7	2022-5-13 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1.5	2022-5-14 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19
STREAMS -65	TIME-TRACKING, General Documentation	2	2022-5-14 00:00	Tomas Klungero Olsen	Updating timesheet
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily	3	2022-5-14 00:00	Tomas Klungero Olsen	Project manual

	calssify into the other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	1.5	2022-5-14 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-48	TIME-TRACKING, other meetings	1	2022-5-15 00:00	Tomas Klungero Olsen	Working on issue STREAMS-48
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-15 00:00	Tomas Klungero Olsen	Project manual
STREAMS-48	TIME-TRACKING, other meetings	1	2022-5-15 00:00	Tomas Klungero Olsen	Working on issue STREAMS-48
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-15 00:00	Tomas Klungero Olsen	Poster
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

STREAMS -48	TIME-TRACKING, other meetings	0.25	2022-5-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS -48	TIME-TRACKING, other meetings	1	2022-5-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS -48	TIME-TRACKING, other meetings	2	2022-5-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-15 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-16 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19
STREAMS -19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	9	2022-5-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS -48	TIME-TRACKING, other meetings	1	2022-5-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS -48	TIME-TRACKING, other meetings	1	2022-5-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-48
STREAMS -65	TIME-TRACKING, General Documentation	1	2022-5-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-65
STREAMS -44	TIME-TRACKING, Sprint Planning	1.666667	2022-5-16 00:00	Lars Ivar Ramberg	Working on issue STREAMS-44
STREAMS -19	All work strictly related to the bachelor-thesis that	9	2022-5-17 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19

	does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	7.5	2022-5-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19
STREAMS-109	Remove "prototypes" and "prototype-flink" repos	0.083333	2022-5-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-109
STREAMS-103	CLONE - As a developer, I want to have formalized criteria for testing, so that I know what needs to be tested, and what constitutes failure and success	1	2022-5-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-103
STREAMS-87	Rewrite mileston plan	0.5	2022-5-17 00:00	Lars Ivar Ramberg	Working on issue STREAMS-87
STREAMS-75	As a developer, I want simulated data to reach the Pulsar broker, so that I may see how Pulsar receives data	1.5	2022-5-17 00:00	Lars Ivar Ramberg	REVIEW
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	8	2022-5-18 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the	11	2022-5-18 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

	other epics. Includes report writing, project poster, and compulsory presentations.				
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	2	2022-5-19 00:00	Tomas Klungero Olsen	Working on issue STREAMS-19
STREAMS-19	All work strictly related to the bachelor-thesis that does not easily calssify into the other epics. Includes report writing, project poster, and compulsory presentations.	5	2022-5-19 00:00	Lars Ivar Ramberg	Working on issue STREAMS-19

6.5.1 sammendrag

Periode	Lars Ivar Ramberg	Tomas Klungerbo Olsen
May 01 – 07 2022	73 timer 50 minutter	64 timer 20 minutter
May 08 - 14 2022	54 timer 50 minutter	54 timer 10 minutter
May 15 - 21 2022	47 timer 30 minutter	27 timer 0 minutter
Total	**176 timer 10 minutter**	**145 timer 30 minutter**