



NTNU

Norwegian University of
Science and Technology

Inspira Scan

Implementation and experiences

Inspira Seminar Nordics, 19.10.2023



Inspira Scan
for dummies



Implementation



Experiences



What's next?



Questions

About NTNU

- Norway's largest university
- 8051 full-time equivalents (5319 academic staff)
- 43422 students
- 8 faculties, 55 departments
- 398 study programmes
- 3 cities: Trondheim, Gjøvik, Ålesund
- Main profile in science and technology

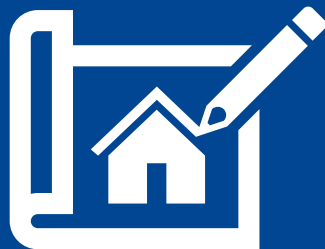


NTNU Exam house in Trondheim

- Opened fall 2018
- Capacity: 1651 seats
- Desktop computers (appr. 700) and Bring your own device







Inspera Scan for dummies

Inspera Scan for dummies

- Allows the candidate to submit handwritten sheets with their submission.
- Useful for all questions where the candidate will draw or write formulas, equations...
- Low tech, easy to use and good alternative to the drawing tool in Essay questions.

Activation by Planner

Exam Day

Candidate tools and aids

New spell checker The spell checker service for Essay questions has been updated to WProofreader. Since this includes Spell-check-as-you-type, this is no longer a separate option below.

[Learn more](#) [Visit online demo](#)

- Enable Text to Speech reading aid [Learn more](#)
- Enable Spell Checker [Learn more](#)
- Disable sketches in essay questions [Learn more](#)

Hand drawing on paper

- Enable Sketches (Inspira Scan)
- Lock submissions when grading starts

This prevents submissions in this test to be affected by future failed imports to other tests

Lost Connection Alert

- Show Lost Connection Alert (Recommended)

The Lost Connection Alert is a notification that is displayed when internet connection has been lost for more than one minute. [Learn more](#)



Sheets with and without grid lines

1 Fill out Question Code and Text Information on every sheet. Fyll inn oppgavekode og emneinformasjon på alle skisseark.

Question Code Oppgavekode	Date Dato	Subject code Emnekode	Candidate ID KandidatID	Question no Oppgavnr	Page number Sidedall	Number of pages Antall ark																																																																																																				
<table border="1"><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr></table>	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9						
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✓ Writing area Skriveområde

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✓ Drawing area Tegnområde

i Fill out Question Code and Test Information on every sheet. Fyll inn oppgavekode og emneinformasjon på alle skisseark.

Question Code
Oppgavekode

Date
Dato

Subject code
Emnekode

Candidate ID
KandidatID

Question no
Oppgavenr

Page number
Sidetall

Number of pages
Antall ark

4938706

19.10.23

TEST1001

10001

1

1

1

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1	1	1	1	1	1	1
2	2	2	2	2	2	2
3	3	3	3	3	3	3
4	4	4	4	4	4	4
5	5	5	5	5	5	5
6	6	6	6	6	6	6
7	7	7	7	7	7	7
8	8	8	8	8	8	8
9	9	9	9	9	9	9

 Writing area Skriveområde

Format

B *I* U \times_2 \times^2 \int_x       Ω   Σ 

Words: 0

Attaching sketches to this question?
Use the following code:


4938706

Submission


- All sheets from the candidate is collected in a cover paper
- Invigilator checks
 - That the question code is shaded
 - The number of sheets
- Invigilator signs the cover paper and collects the sheets


Dato Date	Emnekode Subject code	KandidatID Candidate ID	Antall ark Number of sheets
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Omslag for håndtegninger
Sketch Sheet Folder



Kontrollert av vakt

 **Inspera assessment**

 **NTNU**
Kunnskap for en bedre verden

STANDARDLISTER

TMA4320-demo

10

Individuell levering

Alle kandidater 10

Klagesensur

MINE LISTER

Kandidater med mulige pro... 1

Kandidater i ilden akkurat nå 0

Innkommende besvarelser ... 0

Søk

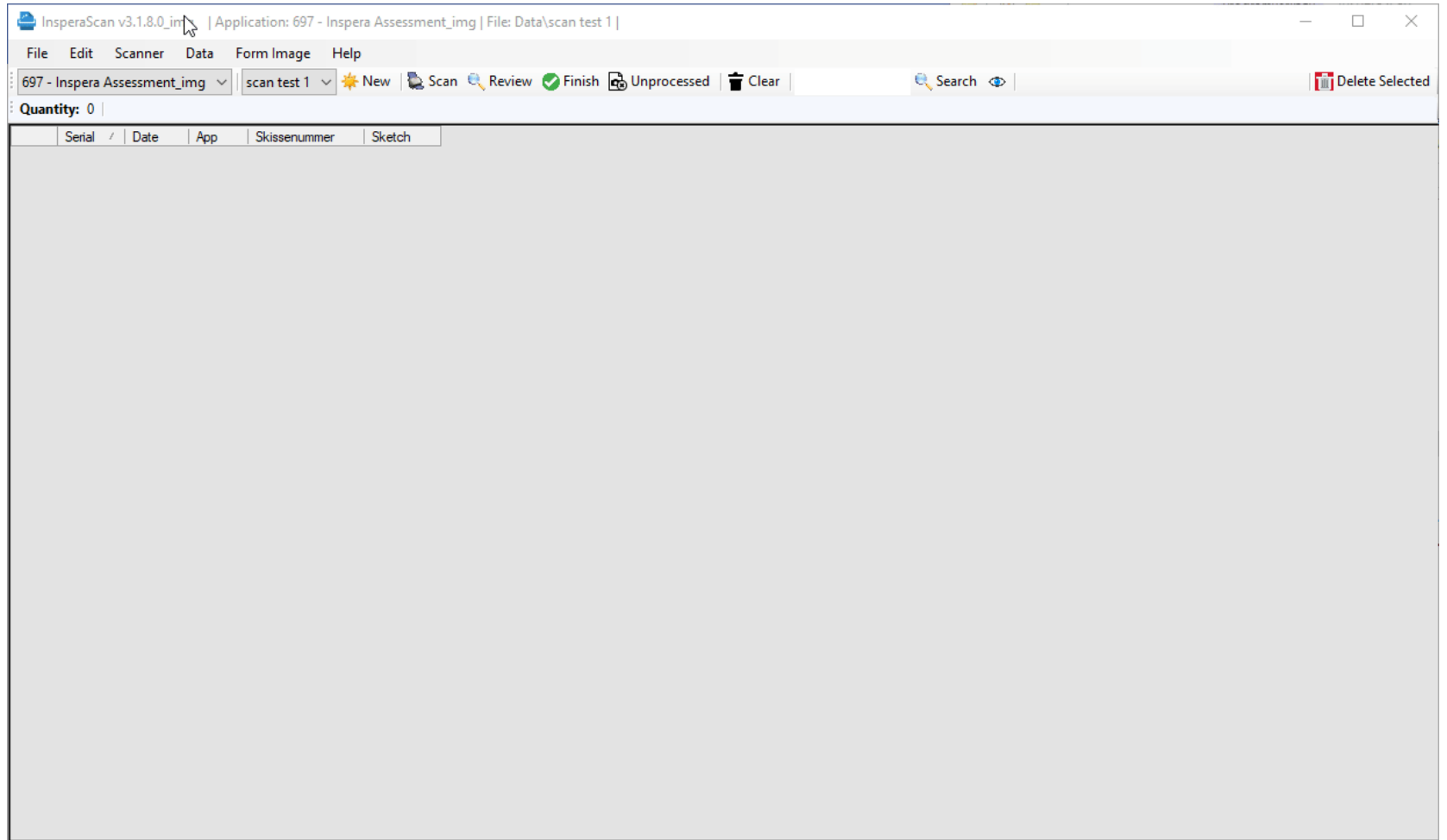
Filtre 0 🔄 🗪 ☰

<input type="checkbox"/>	ID ^	Status	Fremdrift	Advarsel	Minutter brukt	Besvarelse lagret	Ekstratid	Oppmøte	Håndtegninger
<input type="checkbox"/>	0001	ett år ●	15.02.2019 11.46	Inaktiv	7117	15.02.2019 11.43	0	Ikke satt	<input type="text" value="0"/> / 0
<input type="checkbox"/>	✓ 0002	3 måneder ●	20.02.2019 10.13	Leveret	62	20.02.2019 10.13	0	Ikke satt	<input type="text" value="0"/> / 0
<input type="checkbox"/>	0003			Inaktiv			0	Ikke satt	<input type="text" value="0"/> / 0
<input type="checkbox"/>	✓ 0004	ett år ●	20.02.2019 10.13	Leveret	62	20.02.2019 10.13	0	Ikke satt	<input type="text" value="0"/> / 0
<input type="checkbox"/>	0005			Inaktiv			0	Ikke satt	<input type="text" value="0"/> / 0
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<input type="checkbox"/>	0010			Inaktiv			0	Ikke satt	<input type="text" value="0"/> / 0

1 - 10 av 10

Treff pr. side:

« 1 »



InsperaScan v3.1.8.0_img | Application: 697 - Inspera Assessment_img | File: Data\scan test 1 |

File Edit Scanner Data Form Image Help

697 - Inspera Assessment_img | scan test 1 | New Scan Review Finish Unprocessed Clear | Search | Delete Selected

Quantity: 195

	Serial /	Date	App	Skissenummer	Sketch
▶	000001	05.02.2020 14:27	697	73*698*	X
	000002	05.02.2020 14:27	697	2721746	X
	000003	05.02.2020 14:27	697	2353719	X
	000004	05.02.2020 14:27	697	3326081	X
	000005	05.02.2020 14:27	697	2995582	X
	000006	05.02.2020 14:27	697	4468012	X
	000007	05.02.2020 14:27	697	5599693	X
	000008	05.02.2020 14:27	697	3283122	X
	000009	05.02.2020 14:27	697	9445456	X
	000010	05.02.2020 14:27	697	9938565	X
	000011	05.02.2020 14:27	697	1068561	X
	000012	05.02.2020 14:27	697	2954809	X
	000013	05.02.2020 14:27	697	2954809	X
	000014	05.02.2020 14:27	697	2954809	X
	000015	05.02.2020 14:27	697	2843220	X
	000016	05.02.2020 14:27	697	2843220	X
	000017	05.02.2020 14:27	697	7073952	X
	000018	05.02.2020 14:27	697	7073952	X
	000019	05.02.2020 14:27	697	3941453	X
	000020	05.02.2020 14:27	697	1627142	X
	000021	05.02.2020 14:27	697	1627142	X
	000022	05.02.2020 14:27	697	4299859	X
	000023	05.02.2020 14:27	697	8003294	X
	000024	05.02.2020 14:27	697	2952611	X
	000025	05.02.2020 14:27	697	4821763	X
	000026	05.02.2020 14:27	697	8113682	X
	000027	05.02.2020 14:27	697	1713636	X
	000028	05.02.2020 14:27	697	6127838	X
	000029	05.02.2020 14:27	697	7907042	X
	000030	05.02.2020 14:27	697	1235946	X
	000031	05.02.2020 14:27	697	1804679	X
	000032	05.02.2020 14:27	697	5123139	X
	000033	05.02.2020 14:27	697	2598526	X

arild-test-TFE4141 er fullført

[🔗 Åpne i Vurdering](#)

Starttidspunkt

20.12.2019 10.00

Normert sluttid

20.12.2019 16.30[Endre](#) [Åpne for sen levering](#)[📄 Brukernavn og passord for kandidater](#)[Vis som liste](#)

Kandidatenes lenke til prøven

<https://ntnu.inspera.no>

Informasjon om gjennomføring av prøver med sikker nettleser

[Lær mer](#)

Hendelsespassord:

611fa

SEB-passord:

fs3796

Oppgavesett

Exam 2019 TFE4141 Design of digital systems 1 av Øystein Gjermund...[Forhåndsvis](#)[📄 Engelsk](#)

Informasjonsdokument (valgfritt)

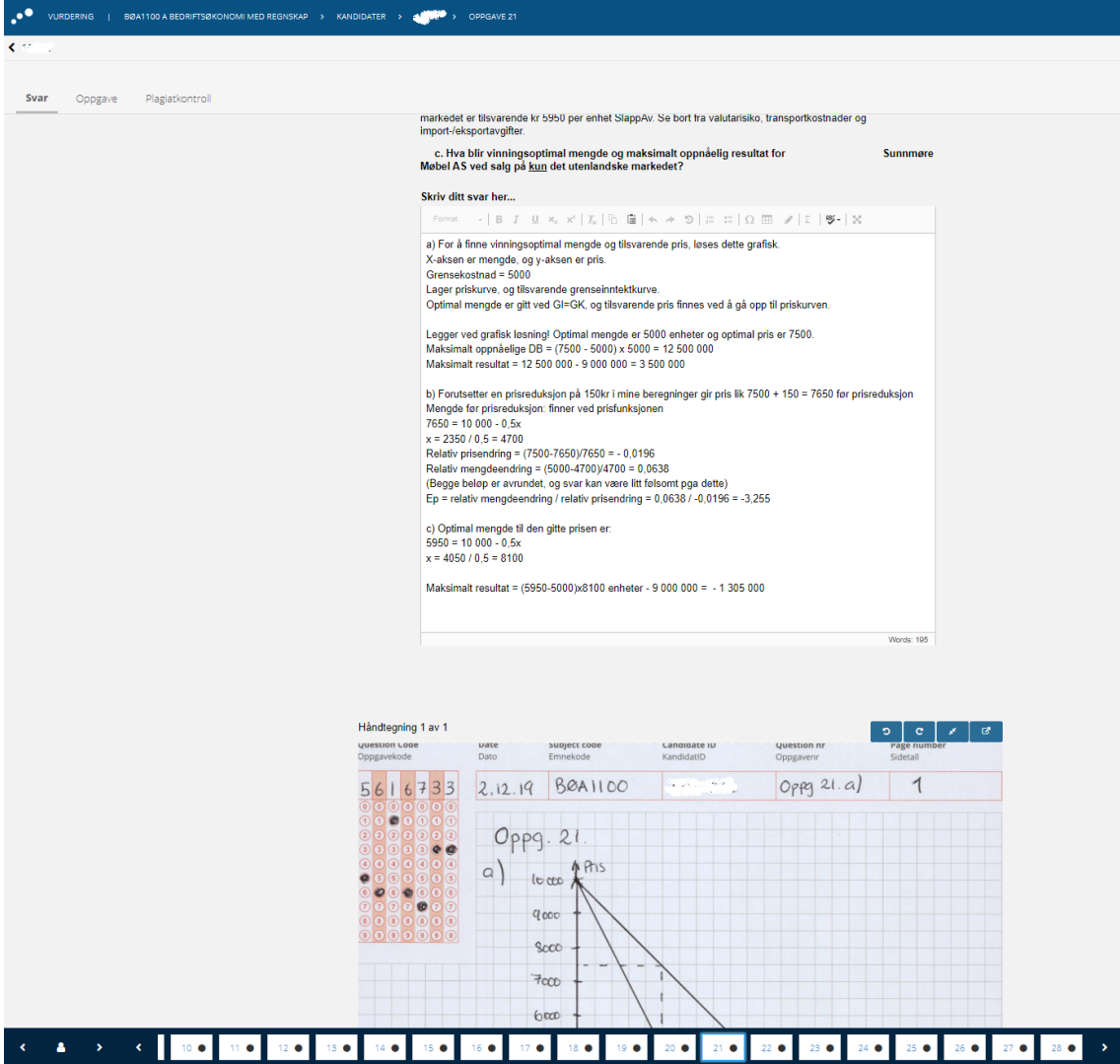
Ikke satt

Veiledning for eksamensvakt - PDF

[📄 Last opp](#)

Grading

- Scanned sheets are available for Grader underneath the digital answer
- Possible to rotate, zoom and pan in the grading tool




VURDERING | BBA1100 A BEDRIFTSØKONOMI MED REGNSKAP > KANDIDATER > OPPGAVE 21

Svar Oppgave Plagiatkontroll

markedet er tilsvarende kr 5950 per enhet SlappAv. Se bort fra valutarisiko, transportkostnader og import-/eksportavgifter.

c. Hva blir vinningsoptimal mengde og maksimalt oppnåelig resultat for Møbel AS ved salg på kun det utenlandske markedet? Summere

Skriv ditt svar her...

Format: 

a) For å finne vinningsoptimal mengde og tilsvarende pris, løses dette grafisk. X-aksen er mengde, og y-aksen er pris. Grensekostnad = 5000 Lager pris kurve, og tilsvarende grenseinntektkurve. Optimal mengde er gitt ved $GI=GK$, og tilsvarende pris finnes ved å gå opp til pris kurven.

Legger ved grafisk løsning! Optimal mengde er 5000 enheter og optimal pris er 7500.
Maksimalt oppnåelige DB = $(7500 - 5000) \times 5000 = 12\,500\,000$
Maksimalt resultat = $12\,500\,000 - 9\,000\,000 = 3\,500\,000$

b) Forutsetter en prisreduksjon på 150kr i mine beregninger gir pris lik $7500 + 150 = 7650$ for prisreduksjon
Mengde for prisreduksjon: finner ved prisfunksjonen
 $7650 = 10\,000 - 0,5x$
 $x = 2350 / 0,5 = 4700$
Relativ prisendring = $(7500-7650)/7650 = -0,0196$
Relativ mengdeendring = $(5000-4700)/4700 = 0,0638$
(Begge belep er avrundet, og svar kan være litt følsomt pga dette)
 $Ep = \text{relativ mengdeendring} / \text{relativ prisendring} = 0,0638 / -0,0196 = -3,255$

c) Optimal mengde til den gitte prisen er:
 $5950 = 10\,000 - 0,5x$
 $x = 4050 / 0,5 = 8100$

Maksimalt resultat = $(5950-5000) \times 8100 \text{ enheter} - 9\,000\,000 = -1\,305\,000$

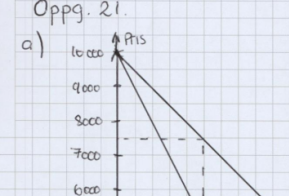
Words: 195

Håndtegning 1 av 1

Question Code	Date	Subject Code	Candidate ID	Question nr	Page number
5616733	2.12.19	BBA1100		Oppg 21.a)	1

Oppg. 21.

a)





Implementation



NTNU

Norwegian University of
Science and Technology

Small scale to large scale

Tests



- Fall 2016: 5
- Fall 2019: 416
- Fall 2022: 537

Candidates



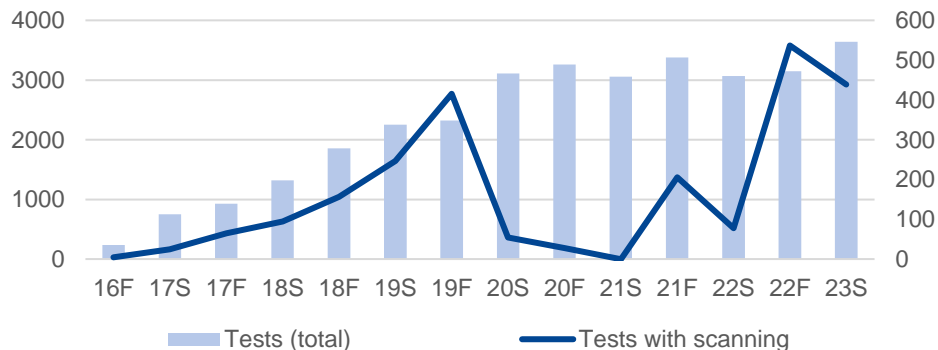
- Fall 2016: 48
- Fall 2019: 20 686
- Fall 2022: 35 410

Sheets

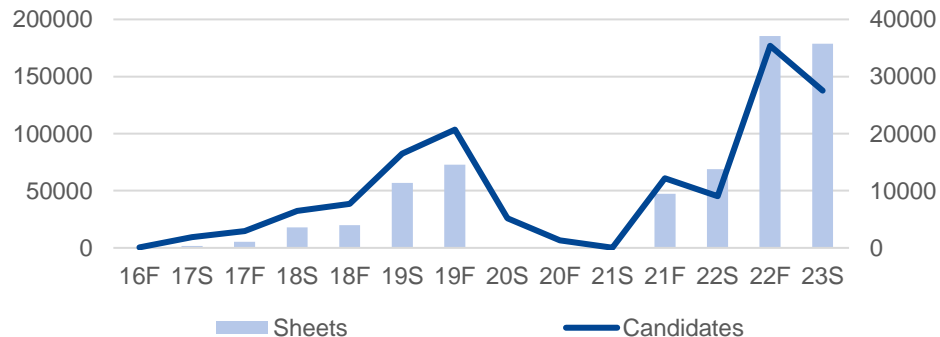


- Fall 2016: 14
- Fall 2019: 72 720
- Fall 2022: 185 440

Number of tests



Number of sketches / Candidates on tests with scanning



Supplement vs “full scanning”

- Originally intended as a supplement to the digital submission
- Criteria for using hand drawings: At least one question had to be answered digitally in Inspera
- Spring 2019: First “full scanning” in Mathematics 2:
1 394 candidates, 13 339 sheets
- Spring 2023: 61 tests with at least 10 sheets per candidate,
totaling 74 857 sheets

Scanners



Scantron InSight 20 Plus

Panasonic KV-S2087



(Ricoh MP-C6503)



Avision AD8120UN











Experiences



Pros



Good alternative to carbon paper or the drawing tool in Inspira



Low user threshold



Works with BYOD



Easy to distribute submissions to (external) graders



Potentially less logistical work for administrative staff





Cons



Large scale scanning is resource demanding



Technical scanner issues




Risk of losing submissions




Difficult for grader to batch download submissions




Challenges

 Administrative routines – how to plan for Inspera Scan on an exam

 Logistics on the exam premises – how many invigilators do you need?


 User errors


Candidates misunderstand how to fill out question codes
Invigilators are unable to help

 Missing question codes after test end time

Not intuitive that you must submit to find them again
Candidate ID disappears after submission

 Ensure that all submitted sheets are scanned

 On large tests: Delayed scanning

 How does the grader know when the scanning is complete?

Improvement suggestions

- Question codes and candidate ID should always be visible for the candidate
- The candidate should be able to register number of sheets submitted
- Activation of hand drawings on single questions or sections – not just the whole question set
- Better support to activate hand drawings during the exam
- Let the Author decide – it should be possible to make the choice in the question set



What's next?

Digital drawing tablets

- Digital drawing and writing
- 850 Wacom One 13 Pen Display
- Drawing in 3rd party software
- Fall 2023: Pilot with 42 tests
- Higher user threshold – more possibilities
- Will hopefully replace *some* of the hand drawings





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Science and Technology

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