Preservation and digitization of historical aerial images in Norway

Hardy Buller, Norwegian Mapping Authority
Analogue aerial photography in Norway: 1935 - 2006

Wild A8 Stereoautograph

Aerial negativ with construction marks
1980-2011
Aerial Image Archive outsourced to private company
2011
Moving 1.3 million (20 tons) negatives to our headquarters
2013
Climatization of the archive

- Cold-water based air processing
- Controlled climatization: 12 °C, 35%RH
- particles & coal-filter system
2011
Diphenylamine Test for Nitratcellulose
Nitratefilm (Celluloid)

- Nitrate cellulose is highly flammable
- It burns extremely fast and emits toxic gasses
- Burning Celluloid is impossible to extinguish – it continues to burn even if you hold it under water
- Chemical instability of the film base causes nitrate negatives to deteriorate, especially when stored in room temperature or above
- Under certain circumstances Nitrate film can self-ignite at storage temperatures of about 40 °C (roll-film)
Controlled destruction of Nitrate cellulose
Nitrate Cellulose container

Kartverket
Aerial image digitization

**Inhouse:**

Leica DSW 700 V-29; 12,5µ

Geosystem Delta 12µ (used for 30x30cm images, now backup)

**Precision Scanning Group**
(Salt Lake City – Utah)
Wehrli RM 6, 12µ

Archiving format:
TIFF, internal overviews
Q-5 compression
About:
- Total of 1.3 mil negatives
- Mostly cut-negatives

**Leica DSW-700-V29**

Capacity of 30,000 negatives/year (own production)

Maintenance contract until 2024

**Perspective:**
50% digitized by 2029
DIGITAL SENTRAL ARCHIVE FOR VERTICAL IMAGES (DSA)

Estimated growth/year: ca. 20-25 TB

DSA 2019
PAN, RGB, few IR
Appr. 1.7 millioner images
300 TB images+data

Transfer of historical digitized images from hdd/tapes, etc.
PAN, RGB, few IR
Estimated: ca. 10-15 TB

gDSA
Closed system for classified images

Digitized historical images (own production + USA)
PAN, few RGB
1930-2005
350.000 bilder

Digital born images from new-production (Omløp + Geovekst & others)
Since 2006: PAN+RGB+IR
Ca. 1.3 million images

Estimated growth/year: ca. 20-25 TB
Making it available to the public

Individual customer service

- Online form for customer requests
- Free of charge individual research service
- Digitization & image distribution (chargeable)
- 500 requests/year
Making it available to the public
Orthophoto viewer: Norgeibilder.no
Digitization & orthorectifying of these projects is funded by municipalities & regional organizations.
Thank you for your attention!

Questions ?