History of Orienteering Maps

- Early 19th Century: small scale topographic maps 1:100'000
- After 2nd world war: colored maps for orienteering 1:15'000
- First ISOM 1969: objective to standardize o-maps
- 1972 Introduction of concept of runability
- 90's Digital cartography
- 05's GPS / Airborne Laser Scanning

Strength of ISOM

- Experience since more than 40 years
- More or less established all around the world
- Well balanced amount of colors and symbols
- Established for simple application (print, pencil & ink, foot steps and compass bearing)
- KISS (**K**eep **I**t **S**imple and **S**tupid)

Weaknesses of ISOM

- Only adopted to digital cartography
- Advantages of digital cartography not considered (e.g. non-period raster, more sophisticated symbols)
- (Dis-) Advantages of digital cartography not considered (compared to ink drawing much more precise representation of terrain is possible)
- Difficult to combine colored area symbols
- Hatched symbols disturbs legibility (e.g. undergrowth)
- Not sufficient possibility to define special symbols

Weaknesses of ISOM

- Not all symbols have a clear definition
- Definition, application and graphic implementation are mixed

ISOM 201x

Trends

- Printing: Just-in-time map production
- Printing: Combine course and map
- Printing: New technologies
  - Laser (Xerox / Dry Toner Transfer)
  - 4 Color Off Set Printing (CMYK-Off Set / CMYK+b-Off Set)
  - Digital Off Set Printing (Indigo / Wet Toner Transfer)
  - Others
- Airborne Laser Scanning, very precise base maps with a lot of detail
- Mobile Mapping (GPS)

ISOM 201x

Threats

- Laser printing jeopardize advantages of digital cartography e.g. slight contour lines are spoiled by poor resolution of laser printing and color appearance
  → then, should we implement them?
- Airborne Laser Scanning and Mobile Mapping tends to result in to much detailed maps, which reduced the whole purpose of the contour line image (pseudo-3-dimensional effect)
  → Less neighboring contours, which spoils pseudo-3-dim. effect
  → Contour lines spoiled by to many point objects

Threats

- Airborne Laser Scanning and Mobile Mapping tends to result in to much detailed maps. It is easier to enforce enlarging maps scales of doing generalization instead.
  → Is this the solution?

ISOM 201x

Opportunities

- Use possibilities of digital cartography
- Consider the development of the printing technology

Case Study: Printing Technology for Orienteering Maps

by Orell Füssli Cartography Switzerland

- Objective: Recommendation printing O-maps with courses included for small amount of copies
- Guarantee PMS colors of ISOM
- Abrasion resistance
- Water resistance

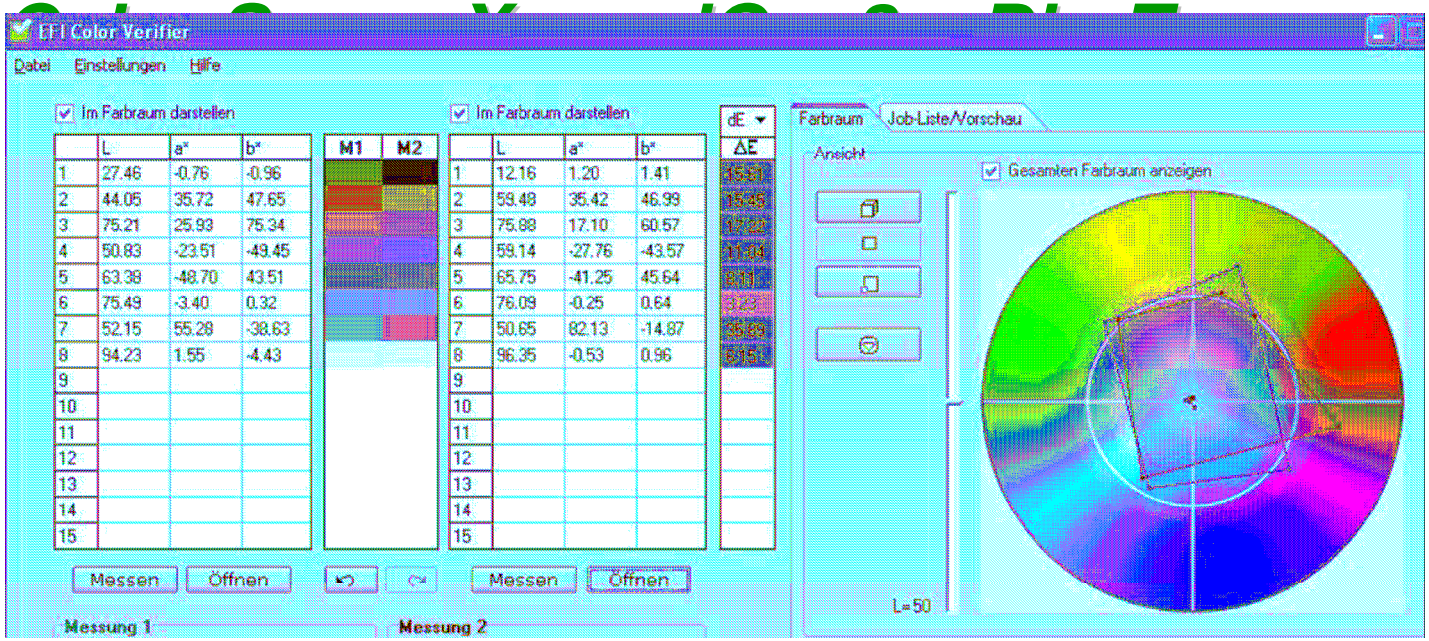
Case Study: Printing Technology for Orienteering Maps

Conclusion:

- 5 (6) color spot color off set (PMS) → best practice (reference)
- Laser (CMYK) dry toner transfer → not suitable at all
- 4 color off set (CMYK + purple) → not suitable
- 6 color off set (CMYK + brown + purple) → good
- 7 color off set (CMYK + brown + green + purple) → very good, for large amount of copies

ISOM 201x

Case Study: Printing Technology for Orienteering Maps



Case Study: Printing Technology for Orienteering Maps

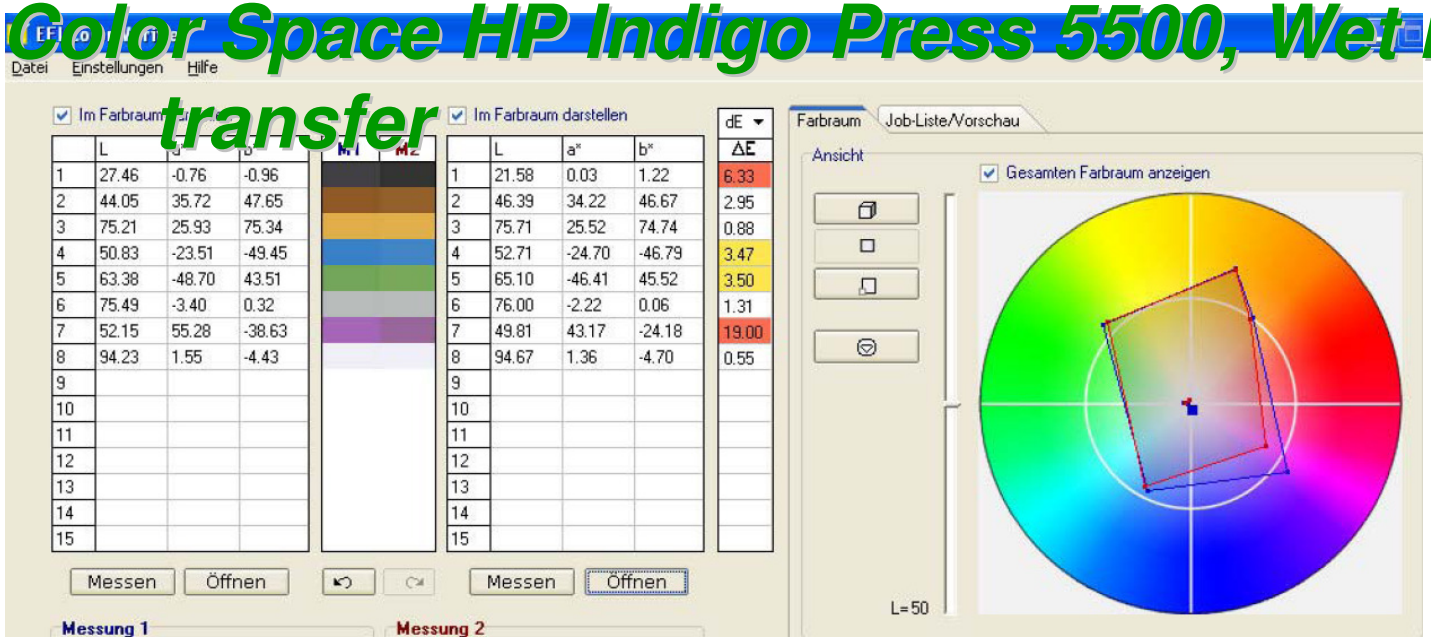
Conclusion:

- Digital Off Set (CMYK + orange + violet + turquoise)
- Wet toner transfer → good, for few amount of copies

ISOM 201x

Case Study: Printing Technology for Orienteering Maps

Color Space HP Indigo Press 5500, Wet ink transfer



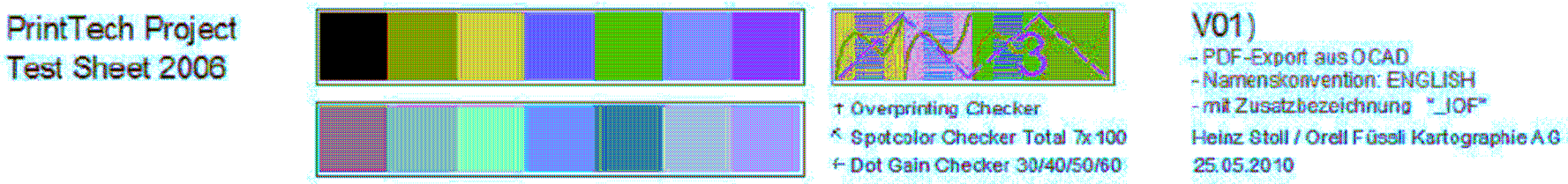
	L	a*	b*	ΔE
1	27.46	-0.76	-0.96	6.33
2	44.05	35.72	47.65	2.95
3	75.21	25.93	75.34	0.88
4	50.83	-23.51	-49.45	3.47
5	63.38	-48.70	43.51	3.50
6	75.49	-3.40	0.32	1.31
7	52.15	55.28	-38.63	19.00
8	94.23	1.55	-4.43	0.55
9				
10				
11				
12				
13				
14				
15				

	L	a*	b*
1	21.58	0.03	1.22
2	46.39	34.22	46.67
3	75.71	25.52	74.74
4	52.71	-24.70	-46.79
5	65.10	-46.41	45.52
6	76.00	-2.22	0.06
7	49.81	43.17	-24.18
8	94.67	1.36	-4.70
9			
10			
11			
12			
13			
14			
15			

Case Study: Printing Technology for Orienteering Maps

Conclusion:

- Digital Off Set (CMYK + orange + violet + turquoise)
- Wet toner transfer → good, for few amount of



Structure of ISOM

- Definition of the symbol
- Graphic implementation
- Application
- Minimum dimension in terrain
- Impact on runability
- Impact on visibility
- Control description

Landforms (earth covered)

- Contour lines for glacier and maybe for rocky areas
- New graphic implementation for form lines
- Broken ground → None period raster
- New special landform feature

Landforms (rocky areas)

- For rock features paler black
- Boulder field → new graphic implementation
- Stony ground → new graphic implementation

Water body

- Impassable water body like ISSOM
- Stick to the rules in ISSOM
- Implement passable water body
- Seasonal pond, water course
- New prominent water body feature

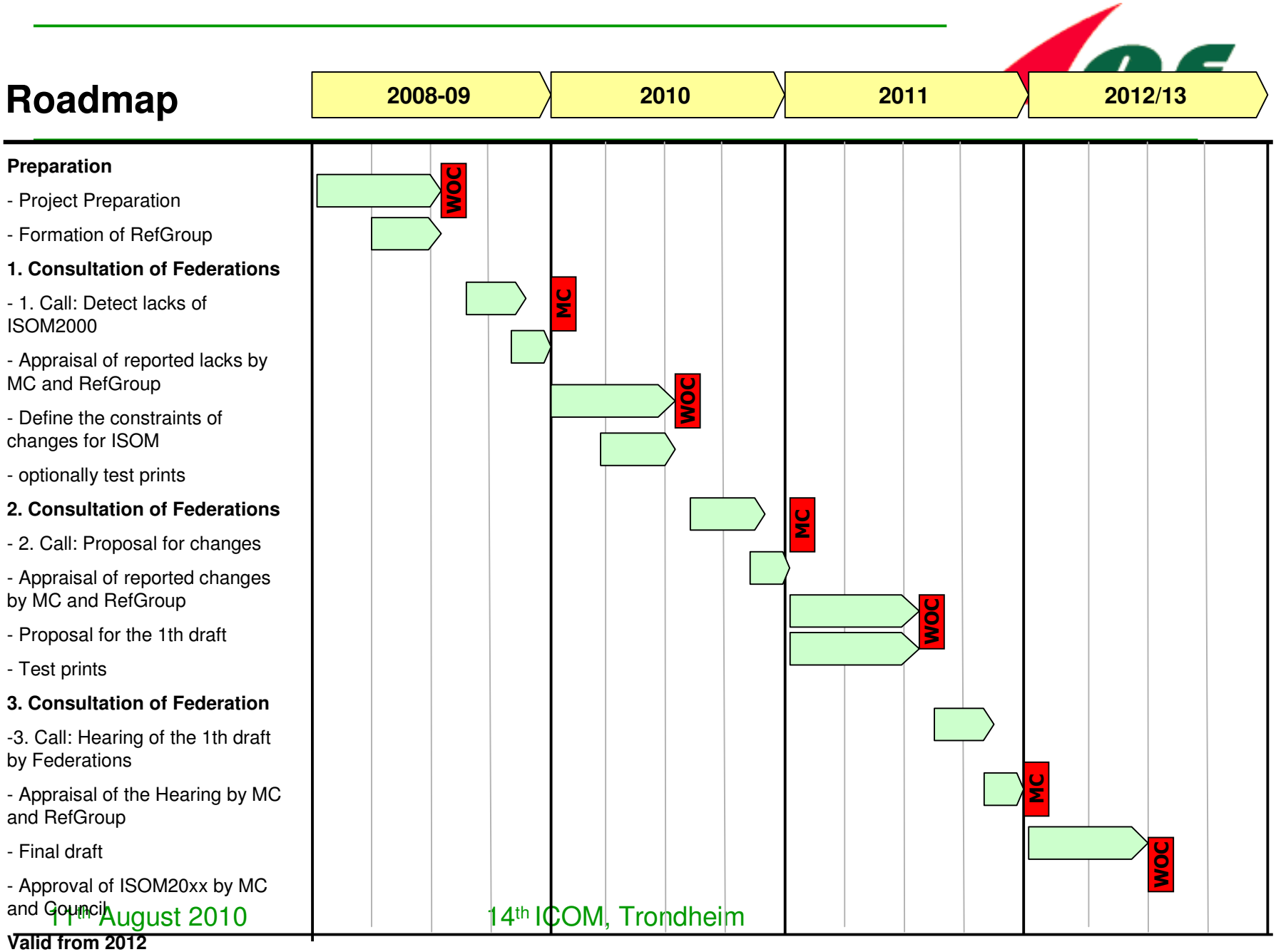
Vegetation

- 3 or 4 level of Vegetation
- New graphic implementation for undergrowth and semi-open area (none-period raster)
- Broken ground → None period raster
- New prominent vegetation feature

Manmade feature

- Narrow ride good / bad runability
- Prominent man made feature triangle

Roadmap


2008-09
2010
2011
2012/13
Preparation
- Project Preparation
- Formation of RefGroup
1. Consultation of Federations
- 1. Call: Detect lacks of ISOM2000
- Appraisal of reported lacks by MC and RefGroup
- Define the constraints of changes for ISOM
- optionally test prints
2. Consultation of Federations
- 2. Call: Proposal for changes
- Appraisal of reported changes by MC and RefGroup
- Proposal for the 1th draft
- Test prints
3. Consultation of Federation
-3. Call: Hearing of the 1th draft by Federations
- Appraisal of the Hearing by MC and RefGroup
- Final draft
- Approval of ISOM20xx by MC and Council
Valid from 2012
WOC
MC
WOC
MC
WOC
MC
WOC