Appendix

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Appendix ...............................................................................................................................1
1 Datasets ................................................................................................................................2
  1.1 Photographs .....................................................................................................................2
  1.2 Landsat 8 bands ................................................................................................................8
  1.3 Sentinel-2 bands ..............................................................................................................13
2 Classification ................................................................................................................................20
  2.1 Photos .............................................................................................................................20
  2.2 Landsat 8 ........................................................................................................................24
  2.3 Sentinel-2 .........................................................................................................................26
3 Thermals ....................................................................................................................................29
1 Datasets

1.1 Photographs

The aerial photographs are World War II images taken by the Americans. They are combined into panoramas and artificial bands are created.

Figure 1 Panorama locations in the field
Figure 2 Original intensity data from photographs

Figure 3 Mean of intensity values
Figure 4 X gradient

Figure 5 Y gradient
Figure 6 Total gradient

Figure 7 Difference compared to surrounding
Figure 8 Standard deviation in X direction

Figure 9 Standard deviation in Y direction
Figure 10 Total standard deviation
1.2 Landsat 8 bands

Landsat 8 is a multispectral satellite image. The 9 available bands are shown below.

Figure 11 Landsat 8 Band 1: Ultra-Blue
Figure 12 Landsat 8 Band 2: Blue

Figure 13 Landsat 8 Band 3: Green
Figure 14 Landsat 8 Band 4: Red

Figure 15 Landsat 8 Band 5: Near Infrared
Figure 16 Landsat 8 Band 6: Shortwave Infrared 1

Figure 17 Landsat 8 Band 7: Shortwave Infrared 2
Figure 18 Landsat Band 10: Brightness temperature in °K

Figure 19 Landsat 8 Band 11: Brightness temperature in °K
1.3 Sentinel-2 bands

Sentinel-2 is a multispectral satellite image. The 13 available bands are shown below.

Figure 20 Sentinel-2 Band 1: Aerosols
Figure 21 Sentinel-2 Band 2: Blue

Figure 22 Sentinel-2 Band 3: Green
Figure 23 Sentinel-2 Band 4: Red

Figure 24 Sentinel-2 Band 5: Red Edge 1
**Figure 25 Sentinel-2 Band 6: Red Edge 2**

**Figure 26 Sentinel-2 Band 7: Red Edge 3**
Figure 27 Sentinel-2 Band 8: NIR

Figure 28 Sentinel-2 Band 8A: Red Edge 4
Figure 31 Sentinel-2 Band 11: Short Wave Infrared 1

Figure 32 Sentinel-2 Band 12: Short Wave Infrared 2
2 Classification

2.1 Photos
The aerial photos are classified using K-means, minimum distance, maximum likelihood and spectral angle.

Figure 33 K-means clustering using 5 clusters
Figure 34 K-means clustering using 10 clusters

Figure 35 K-means clustering using 15 clusters
Figure 36 Panorama classification using minimum distance algorithm

Figure 37 Panorama classification using maximum likelihood algorithm
Figure 38 Panorama classification using spectral angle algorithm
2.2 Landsat 8
Landsat 8 classified using K-means and CART.

Figure 39 Landsat 8 clustering using K-means
Figure 40 Landsat 8 classification using CART excluding the equipment class

Figure 41 Landsat 8 classification using CART including the equipment class
2.3 Sentinel-2

Sentinel-2 classified using K-means and CART, for both the averaged clouds and the applied cloud filter.

Figure 42 Sentinel-2 averaged clouds classification using CART excluding the equipment class
Figure 43 Sentinel-2 averaged clouds classification using CART including the equipment class

Figure 44 Sentinel-2 with cloud filter classification using CART excluding the equipment class
Figure 45 Sentinel-2 with cloud filter classification using CART including the equipment class.
3 Thermals

Thermal bands of Landsat 8 and Sentinel-2 showing the top values.

Figure 46 Landsat 8 thermal band 7 top 0.2% of the values
Figure 47 Sentinel-2 averaged clouds band 12 top 1% of the values

Figure 48 Sentinel-2 with cloud filter band 12 top 1% of the values