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Dear Researcher,

In the frame of the EC project HYRESSA (FP6-2004-Infrastructures-6, Contract Number 026194), we would like to ask you for a collaboration regarding a research subject in the field of hyperspectral data quality and products.

What is HYRESSA?
HYRESSA aims at investigating the user needs of the European hyperspectral research community with respect to access to and accuracy, quality and conformity of hyperspectral images - especially with the advent of next-generation European hyperspectral sensors in order to refine protocols related to calibration, acquisition, processing and in-situ measurements in compliance with standards. HYRESSA is a starting point to build a European user-oriented hyperspectral remote sensing Research Infrastructure. For more information, please consult the project web site: www.hyressa.net

What is the research subject?
In the frame of the HYRESSA project an analysis is performed regarding the question "What are your individual user requirements on hyperspectral imagery and the related data products?"

What is the purpose of the analysis?
While there is a strong need for hyperspectral imagery, the user-driven requirements are not well defined in view of defined protocols for calibration, acquisition, processing and in-situ measurements in compliance with existing standards. The questionnaire will retrieve the users needs and evaluate these open items accordingly.

Why you?
You are an expert in the field of (hyperspectral) Earth observation. Therefore it would be great to get your 'expert viewpoint' for evaluating the objective model. Filling out this questionnaire, will give you the chance to influence EU research strategy and policy makers.
Please feel free to forward the questionnaire to anybody involved in hyperspectral research.

What should you do?
1. Please answer the basic questions on the profile of your research (see section 1.).
2. Please enter the objective value indicator values (see section 3.3.).

What happens to the data?
The data will be evaluated completely anonymous, however the results of this investigation will be presented at the 1st HYRESSA workshop on Hyperspectral Remote Sensing in Europe and reports will be sent to EU research policy makers.

Due date: 22-Dec-2006

Do not hesitate contacting in any case of questions/comments:

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1. Background on HYRESSA and QUN (Questionnaire on User Needs)

HYRESSA aims at investigating the user needs of the European hyperspectral research community with respect to access to and accuracy, quality and conformity of hyperspectral images - especially with the advent of next-generation European hyperspectral sensors - in order to refine protocols related to calibration, acquisition, processing and in-situ measurements in compliance with standards. This knowledge will be gathered through a SWOT and User Needs workshop (at DLR in July 2006) and an on-line questionnaire (this questionnaire). Furthermore, HYRESSA aims at exploring strategies through an exploratory workshop bringing together hyperspectral data providers and users to build a Europe-wide network of hyperspectral remote sensing facilities and to coordinate a user-oriented hyperspectral remote sensing Research Infrastructure. HYRESSA may lead to a new proposal for a Research Infrastructure with the objectives to build a European network of hyperspectral remote sensing facilities, to provide best practices and to give European researchers optimal - taking into account produced HYRESSA knowledge – transnational access to coordinated European hyperspectral flight campaigns and access to hyperspectral data archives. Findings of the QUN will be presented during the 10th Intl. Symposium on Physical Measurements and Signatures in Remote Sensing & 1st HYRESSA Workshop on Hyperspectral Remote Sensing in Europe, 12.-14. Mar. 2007, Davos, Switzerland.

What should you do?

Please answer the following basic questions on the profile of your individual research.

- Please give us some information about your organisation?
  Number of employees: [ ]
  Governmental [ ], University [ ], Commercial [ ] or Research Institute [ ]
  Country: [ ]
- Which application area is of special interest for you?
  (Pls select the *one* application for which you will fill out the QUN:
  vegetation [ ], limnology [ ], landuse [ ], geology [ ], forest [ ], agriculture [ ])
- How many percent of your time is devoted to hyperspectral research? [ ] %
- Used sensor types (multiple selections possible) *:
  (CHRIS [ ], HYPERION [ ], HYMAP [ ], CASI [ ], AISA Eagle [ ],
  AISA Hawk [ ], SASI [ ], AVIRIS [ ], Other [ ])

2. Approach for the determination of the relative value of hyperspectral data products for Earth observation

The purpose of this investigation is to find the answer to the question "What makes hyperspectral data attractive?" in an objective model. Consequently, the answer can be described as hierarchical order of existing or planned data products.

As a possibility of comparing projects or solutions the benefit-value analysis serves as well-known tool for systematic problem solving process[1]. It enables the evaluation on the basis of a multidimensional objective model and can be extended by expert's preferences. Therefore the scaling method (Law of Comparative Judgment) has to be applied for receiving the desired ranking judgments. The result, which is the relative value of projects concerning a well-defined main objective can now be produced analytically.

[1] Zangemeister, C. (1970): Nutzwertanalyse in der Systemtechnik. Eine Methodik zur multidimensionalen Bewertung und Auswahl von Projektalternativen. München, 370 S.

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Accordingly, this procedure can be utilized for the determination of the rank of existing or planned hyperspectral data products and will be outlined in an application-driven way, i.e., for the HYRESSA conditions:

2.1. Defining an Objective Model for hyperspectral data
The first step is to define a main objective of the objective model, i.e., "Max. attractiveness of hyperspectral data". Thereinafter all properties of hyperspectral imagery data (VNIR-TIR) must be arrayed and sorted. Therefore an tree diagram can be used, what leads to a hierarchical structure of the objective model: On top of the diagram the main objective is placed which is branched (and further substantiated) to three subordinated objective levels. The objective model's last level of the tree diagram are objective value indicators and dedicated value indicator functions. These indicators are e.g., swath width, processing steps, radiometric spectral data quality, price etc. and can be in general quantified in units, e.g., km, level 1-3, %, and €.

2.2. Objective model weighting procedure of experts (the user which we will ask in the QUN)
A weighted objective model should be performed because the objectives have different relative values for different viewpoints. This first evaluation process is realised by potential users in the field of airborne remote sensing. The weighting is performed in distributing 100 percent points on the objectives of each branching point in each objective level. These branching weights denote the relative objective value concerning the main objective on top of the tree diagram. The result is an objective model where all objective levels and objective value functions are weighted hierarchically with relative weights (priorities) concerning the objective-specific value of hyperspectral imaging data.

The following steps will be performed after your evaluation [2]:
2.3. Compilation of an Earth observation hyperspectral data survey
2.4. Comparison on the level of the objective value indicators
2.5. Synthesis of values for each sensor data

3. Structure of the objective model

In order to retieve the user-specific requirements on hyperspectral data and analyse the interest of users a main objective of the objective model was selected, i.e., "Maximal attractiveness of hyperspectral data".

3.1. Description of the objectives
The main objective is divided in 4 different objectives on the 2nd objective level, i.e., best image based properties (A), best ergonomic properties (B), lowest costs (C), best service (D).
Thereinafter, the objectives of the 2nd objective level are hierarchically in sub-objectives in a 3rd objective level. As a result, objective A is subdivided in best spectral, best geometric, best radiometric and best temporal parameters. The objective B leads to best data delivery and best documentation. The objective C results in lowest data costs and lowest further expenses and objective D is hierarchically split in best support of data provider and best further services.

[2] You will be informed on details and outcome of the analyze in case you provide your e-mail address.

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Same approach is taken for the 4th objective level, which includes to a certain extent also the indicator values. The entire objective model is presented in the figure attached to this QUN.

What should you do?
Please enter the Relative Values RV [ ] in the following way:
1. Begin at the top level and answer the following question: "Which subordinated objective has the highest, second highest etc. importance for fulfilling the objective?"
2. Denote the ranking with values between 0 (unimportant) and 10 (very important).

3.2. Description of the objective model in form of a table

Main objective:
Maximal Attractiveness of Hyperspectral Data

2nd objective level	relative importance scale: 0 - 10
A: Best image based properties	
B: Best ergonomic properties (ease of use)	
C: Lowest costs	
D: Best service	

3rd objective level	relative importance scale: 0 - 10
A1: Spectral parameters	
A2: Geometric parameters	
A3: Radiometric parameters	
A4: Temporal parameters	

	relative importance scale: 0 - 10
B1: Data delivery	
B2: Documentation delivery	

	relative importance scale: 0 - 10
C1: Data costs	
C2: Further expenses	

	relative importance scale: 0 - 10
D1: Support of data provider	
D2: Further service	

Denote the ranking with values between 0 (unimportant) and 10 (very important).

4th objective level

A: Best image based parameters

A1: Spectral parameters

	relative importance scale: 0 - 10
A11: No. of spectral bands	
A12: Spectral resolution [nm]	
A13: Quality of spectral calibration	

A2: Geometric parameters

	relative importance scale: 0 - 10
A21: Swath width of data	
A22: Spatial resolution	
A23: Observation geometry	
A24: Quality of geometric calibration	

A3: Radiometric parameters

	relative importance scale: 0 - 10
A31: SN ratio	
A32: Digitalization	
A33: Linearity	
A34: Polarization	
A35: Quality of radiometric calibration	

A4: Temporal parameters

	relative importance scale: 0 - 10
A41: Daytime of observation	
A42: Repeatitivity of observation	
A43: Data continuity (availability of similar data in terms of format, specifications)	
A44: Weather conditions	

B: Best ergonomic properties (ease of use)

B1: Data delivery

	relative importance scale: 0 - 10
B11: Data Format	
B12: Data Access	
B13: Delivery of Image Data	
B14: Delivery of additional data	
B15: Time of delivery	

3.3. Description of the data relevant value indicators of the objective model

What should you do?
1. Please enter the Relative Values in the following tables by regarding the appropriate scale (i.e, 0 – 10 between unimportant and very important).
2. Please enter the Absolute Values in the following tables by regarding the dimension

A: Best image based parameters

A1: Spectral parameters

A11: No. of spectral bands

	relative importance scale: 0 - 10	favored number of spectral bands
1. Spectral bands between 380 and 450 nm		
2. Spectral bands between 450 and 700 nm		
3. Spectral bands between 700 and 1000 nm		
4. Spectral bands between 1000 and 1100 nm		
5. Spectral bands between 1100 and 1400 nm		
6. Spectral bands between 1400 and 1900 nm		
7. Spectral bands between 1900 and 2500 nm		
8. Spectral bands between 3.5 and 4.2 µm		
9. Spectral bands between 4.2 and 5.5 µm		
10. Spectral bands between 5.5 and 8 µm		
11. Spectral bands between 8 and 9 µm		
12. Spectral bands between 9 and 10 µm		
13. Spectral bands between 10 and 14.5 µm		

A12: Spectral resolution [nm]

	relative importance scale: 0 - 10	favored spec. resol. FWHM [nm]
1. High spectral resolution between 380 and 450 nm		
2. High spectral resolution between 450 and 700 nm		
3. High spectral resolution between 700 and 1000 nm		
4. High spectral resolution between 1000 and 1100 nm		
5. High spectral resolution between 1100 and 1400 nm		
6. High spectral resolution between 1400 and 1900 nm		
7. High spectral resolution between 1900 and 2500 nm		
8. High spectral resolution between 3.5 and 4.2 µm		
9. High spectral resolution between 4.2 and 5.5 µm		
10. High spectral resolution between 5.5 and 8 µm		
11. High spectral resolution between 8 and 9 µm		
12. High spectral resolution between 9 and 10 µm		
13. High spectral resolution between 10 and 14.5 µm		

(Note, in the following the spectral regions are divided in VNIR: .35-1.0 µm; SWIR: 1.0-2.5µm; MIR: 3.5-7.5µm; TIR: 8.0-14.5µm)

A13: Quality of spectral calibration

	relative importance scale: 0 - 10	absolute error [nm]
1. Quality of spectral calibration in VNIR range		
2. Quality of spectral calibration in SWIR range		
3. Quality of spectral calibration in MIR range		
4. Quality of spectral calibration in TIR range		

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A2: Geometric parameters

A21: Swath width of data

	relative importance scale: 0 - 10	absolute number [km]
1. Swath width in VNIR range		
2. Swath width in SWIR range		
3. Swath width in MIR range		
4. Swath width in TIR range		

A22: Spatial resolution

	relative importance scale: 0 - 10	absolute number [m]
1. Spatial resolution in VNIR range		
2. Spatial resolution in SWIR range		
3. Spatial resolution in MIR range		
4. Spatial resolution in TIR range		

A23: Observation geometry

	relative importance scale: 0 - 10	absolute number
1. Number of viewing angles		
2. Range of viewing angles [deg]		

A24: Quality of geometric calibration

	relative importance scale: 0 - 10	absolute number [Pixel]
1. Quality of geometric calibration in VNIR range		
2. Quality of geometric calibration in SWIR range		
3. Quality of geometric calibration in MIR range		
4. Quality of geometric calibration in TIR range		

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HYRESSA

A3: Radiometric parameters

A31: SN ratio

	relative importance scale: 0 - 10	absolute number
1. SN ratio in VNIR range		
2. SN ratio in SWIR range		
3. SN ratio in MIR range		
4. SN ratio in TIR range		

A32: Digitalization

	relative importance scale: 0 - 10	absolute number [Bit]
1. Digitalization in VNIR range		
2. Digitalization in SWIR range		
3. Digitalization in MIR range		
4. Digitalization in TIR range		

A33: Linearity

	relative importance scale: 0 - 10	absolute number [%]
1. Linearity in VNIR range		
2. Linearity in SWIR range		
3. Linearity in MIR range		
4. Linearity in TIR range		

A34: Polarization Sensitivity

	relative importance scale: 0 - 10	absolute number [%]
1. Polarization Sensitivity in VNIR range		
2. Polarization Sensitivity in SWIR range		
3. Polarization Sensitivity in MIR range		
4. Polarization Sensitivity in TIR range		

A35: Quality of radiometric calibration

	relative importance scale: 0 - 10	absolute number [%]
1. Quality of radiometric calibration in VNIR range		
2. Quality of radiometric calibration in SWIR range		
3. Quality of radiometric calibration in MIR range		
4. Quality of radiometric calibration in TIR range		

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A4: Temporal parameters

A41: Daytime of observation

	relative importance scale: 0 - 10
1. Observation time AM	
2. Observation time mid day	
3. Observation time PM	
4. Night observation	

A42: Repeatitivity of observation

	relative importance scale: 0 - 10
1. Daily repetition	
2. Weekly repetition	
3. Monthly repetition	
4. Yearly repetition	
5. No repetition	

A43: Data continuity (availability of similar data in terms of format, specifications)

	relative importance scale: 0 - 10
1. Continuity for 2-3 years	
2. Continuity for 4-7 years	
3. Continuity for 7-10 years	
4. Continuity for decades	
5. No Continuity required	

A44: Weather conditions

	relative importance scale: 0 - 10
1. Clear sky (No cloud at any level)	
2. Partly cloudy sky (between one-quarter and three-quarters clouded)	
3. Mainly cloudy (not less than three-quarters covered)	
4. Clouded	

Denote the ranking with values between 0 (unimportant) and 10 (very important).

B: Best Ergonomic Properties (Ease of Use)

B1: Data Delivery

B11: Data Format

	rel. importance scale: 0 - 10	favoured format type
1. Image data format		
2. Header data format		
3. Auxiliary data format		
4. Quality flag format		

B12: Data Access (preferred way how to access the data)

	rel. importance scale: 0 - 10
1. CD-Rom / DVD	
2. FTP	
3. Remote Processing	

B13: Delivery of Image Data (preferred data product level)

	rel. importance scale: 0 - 10
1. Level 0 raw data	
2. Level 1 at-sensor radiance	
3. Level 2 at-surface reflectance (geo-atmo-corrected)	
4. Level 3 and higher level products	

B14: Delivery of additional data

	rel. importance scale: 0 - 10
1. Header	
2. Auxiliary	
3. Quality flags	
4. Ground truth data	

B15: Time of delivery (from provider to customer)

	rel. importance scale: 0 - 10
1. Day	
2. Week	
3. Month	

B2: Documentation delivery

	rel. importance scale: 0 - 10
B21: Data Format Description	
B22: Algorithm Description	
B23: Metadata/auxiliary data description	

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C: Lowest Costs

C1: Data costs

	rel. importance scale: 0 - 10	absolute value [€/km^2]
C11: Costs for Level 0 raw data		
C12: Costs for Level 1 at-sensor radiance		
C13: Costs for Level 2 (geo-atmo-corrected) at-surface reflectance		
C14: Costs for Level 3 and higher level products		

C2: Further expenses

	rel. importance scale: 0 - 10
C21: Costs for add-on modules for software	
C22: Costs for Training	
C23: Costs for Interpretation assistance	

D: Best Service

D1: Support of data provider

	rel. importance scale: 0 - 10
D11: Helpline phone	
D12: Helpline Internet (FAQ)	
D13: Helpline e-mail	

D2: Further services

	rel. importance scale: 0 - 10
D21: Warranty	
D22: Availability of Discussion forum	
D23: Availability of Training	
D24: Availability of Interpretation assistance	
D25: Availability of Add-on software modules	

3.4. Any further comments or suggestions?

What should you do?
Last but not least:

1. Please feel free to enter your comments / suggestions about the QUN, the HYRESSA project or anything else. It will help us to improve quality of the questionnaire and the related evaluation.
2. If you are interested in receiving the QUN evaluation report or want to stay informed about the HYRESSA project please fill in your e-mail address.
   One person filling in the QUN (including e-mail address) will be randomly selected to receive a grant to participate in the 1st HYRESSA workshop on Hyperspectral Remote Sensing in Europe, 12-14 March 2007, Davos, Switzerland (http://www.hyressa.net/workshops.htm).

Comments/suggestions:

E-mail address:

4. Definitions of objectives and indicators

A: Best image based properties

This objective is dealing with spectral, geometric, radiometric and temporal parameters of the image data.

A1: Spectral parameters

The spectral parameters include the number of spectral bands, the spectral resolution and the quality of spectral calibration.

A11: No. of spectral bands

The importance of each spectral band should be indicated and the required number of bands per class should be specified in absolute values. The spectral range from 380 nm to 14.5 µm is divided into 13 classes.

A12: Spectral resolution [nm]

The importance of spectral resolution should be indicated and the required spectral resolution should be given per class in [nm]. The spectral range from 380 nm to 14.5 µm is divided into 13 classes.

A13: Quality of spectral calibration

The importance of the spectral calibration per spectral range should be indicated and absolute numbers should be given in [nm]. The spectral range from 380 nm to 14.5 µm is divided into the four classes VNIR, SWIR, MIR and TIR, with VNIR: 0.35-1.0 µm; SWIR: 1.0-2.5 µm; MIR: 3.5-7.5 µm; TIR: 8.0-14.5 µm.

A2: Geometric parameters

The geometric parameters include the swath width, the spatial resolution, the observation geometry and the quality of geometric calibration.

A21: Swath width of data

The importance of the swath width should be indicated and the required swath width should be given in [km]. The spectral range from 380 nm to 14.5 µm is divided into the four classes VNIR, SWIR, MIR and TIR.

A22: Spatial resolution

The importance of the spatial resolution should be indicated and absolute numbers should be given in [m]. The spectral range from 380 nm to 14.5 µm is divided into the four classes VNIR, SWIR, MIR and TIR.

A23: Observation geometry

The observation geometry refers to the number and range of along-track viewing angles, which are necessary to obtain the required observation direction of a target. The range of viewing angles indicate the maximum across-track range in which measurements should be carried out. The importance should be indicated for the number and range of viewing angles and absolute numbers should be specified, for the range in [deg], such as 90 deg for the range +45 deg to - 45 deg.

A24: Quality of geometric calibration

The geometric calibration refers to the accuracy of the calibrated pixel position, i.e. it indicates how far the calibrated position may lie apart from the pixel's real position.

A3: Radiometric parameters

The radiometric parameters include the signal-to-noise ratio, the digitalization, the linearity, polarization sensitivity and the quality of radiometric calibration.

A31: signal-to-noise (SN) ratio

The SN ratio is the ratio between the signal and the noise of a single measurement. It is a measure for the quality of a signal, i.e., the higher the SN ration, the higher the quality of the data. The SN ratio depends basically on the targets and should reflect here the required SN ration for a specific target.

A32: Digitalization

Digitalization refers to the number of bit used for each channel.

A33: Linearity

Systems that satisfy both additively and homogeneity are considered to be linear systems. In general sensors are considered non-linear system when the sensor signals become very high or are very low. As long as the non-linearity is known the data can be interpreted accordingly. An indication should be given how well known the system should be characterised, especially in the low and high signal range.

A34: Polarization sensitivity

Different linear polarization states incident with equal radiometric power will be measured as different power levels, when the optical system in sensitive to linear polarization. In general optical systems contain polarization sensitivity due to optical elements, e.g., diffraction gratings, folding and scanning mirrors, dichroic filters. The importance of a non-sensitivity and the absolute acceptable linear polarization of a sensor should be indicated here.

A35: Quality of radiometric calibration

The radiometric calibration refers to the accuracy of the calibrated radiance, i.e. it describes how large the error of the calibrated radiance is compared to the standard radiance sources in percent.

A4: Temporal parameters

The temporal parameters include the daytime and repeatitivity of observation, the data continuity and the weather conditions.

A41: Daytime of observation

The preferred daytime of observation should be indicated.

A42: Repeatitivity of observation

How important is a specific rate of repeatability, i.e. the time within an observation can be repeated?

A43: Data continuity

The data continuity refers to the time period in future/past during which similar data regarding format and specifications are available.

A44: Weather conditions

The preferred weather conditions during the observation should be indicated.

B: Best ergonomic properties (ease of use)

This objective is dealing with the data delivery, format, access, product levels availability, time of delivery and available data documentation.

B1: Data delivery

Data delivery includes data format, data access, delivery of image data, delivery of additional data and time of delivery.

B11: Data format

The importance and the required data format should be indicated for the following data types: image data (e.g. .tiff, .hdf), header data format (e.g. .binary, .ascii), auxiliary data format(e.g. .binary, .ascii), quality flag format (e.g. .binary, .ascii),

B12: Data access

The importance of the following types of data access should be specified:

CD-Rom/DVD, FTP (network protocol that enables the data transfer between two servers), Remote Processing (Enables data processing from different locations without the need of having the data physically available).

B13: Delivery of image data

The importance of the different levels of processing should be indicated:

Level 0 (raw data), Level 1 (calibrated at-sensor radiance/reflectance), Level 2 (geo- and atmospheric corrected at-surface reflectance), Level 3 (spatially/temporally integrated higher-level products).

B14: Delivery of additional data

How important is the delivery of additional data such as header, auxiliary data, quality flags and ground truth data for the user?

B15: Time of delivery

The importance of the delivery times (from data capture to pre-processed data) should be indicated here.

B2: Documentation delivery

The documentation delivery includes the allocation of additional information through the data provider regarding data format, algorithms, metadata and auxiliary data.

B21: Data format description

The importance of the description of the data format / product should be indicated.

B22: Algorithm description

How important is it for the user to learn about the details of the applied algorithms?

B23: Metadata / auxiliary data description

Metadata contains for example location of recording (lat./long.), time, flight altitude, coordinates of the sensor (roll, pitch, jaw), date, sensor parameters, etc.

Examples for auxiliary data are information on the weather, like solar irradiation, sky cover and wind. How important is it for the user to have this data delivered together with the image data?

C: Low costs

This objective is dealing with the question how much the user is willing to spend for image data and additional services.

C1: Data costs

The cost relevance of the different processing levels L0, L1, L2 and L3 should be specified, i.e. the user should indicate the importance of the costs for a specific processing level. Additionally a realistic maximum price (cost caps) should be indicated for a requested scene in €/km^2.

C2: Further expenses

Further expenses include costs for add-on modules for software, costs for training and for interpretation assistance.

C21: Costs for add-on modules for software

How important are the costs of add-on modules for software offered from the data provider for the user?

C22: Costs for training

How important are the costs of training offered from the data provider for the user?

C23: Costs for interpretation assistance

How important are the costs for the assistance of an expert regarding data handling and interpretation?

D: Best service

This objective is dealing with the importance for the user to obtain support and further services from the data provider.

D1: Support of data provider

Different forms of support such as phone, internet and e-mail helpline should be evaluated regarding their user-related importance.

D11: Helpline phone

How important is it for the user to have a phone helpline made available by the data provider?

D12: Helpline internet (FAQ)

How important is it for the user to have an internet helpline made available by the data provider answering frequently asked questions (FAQ)?

D13: Helpline e-mail

How important is it for the user to have an e-mail helpline made available by the data provider?

D2: Further services

Different forms of further services such as warranty, availability of discussion forum, training, interpretation assistance and add-on software modules are evaluated regarding their user-related importance.

D21: Warranty

How important is it for the user to have a warranty regarding the promises made by the data provider about the data quality? For incomplete image data caused by sensor damages no warranty is provided.

D22: Availability of discussion forum

How important is it for the user to have access to an on-line discussion forum where problems can be discussed and solved with the help of other users?

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D23: Availability of training

How important is it for the user to have the possibility to attend trainings where the data and software handling and interpretation can be learned and consolidated?

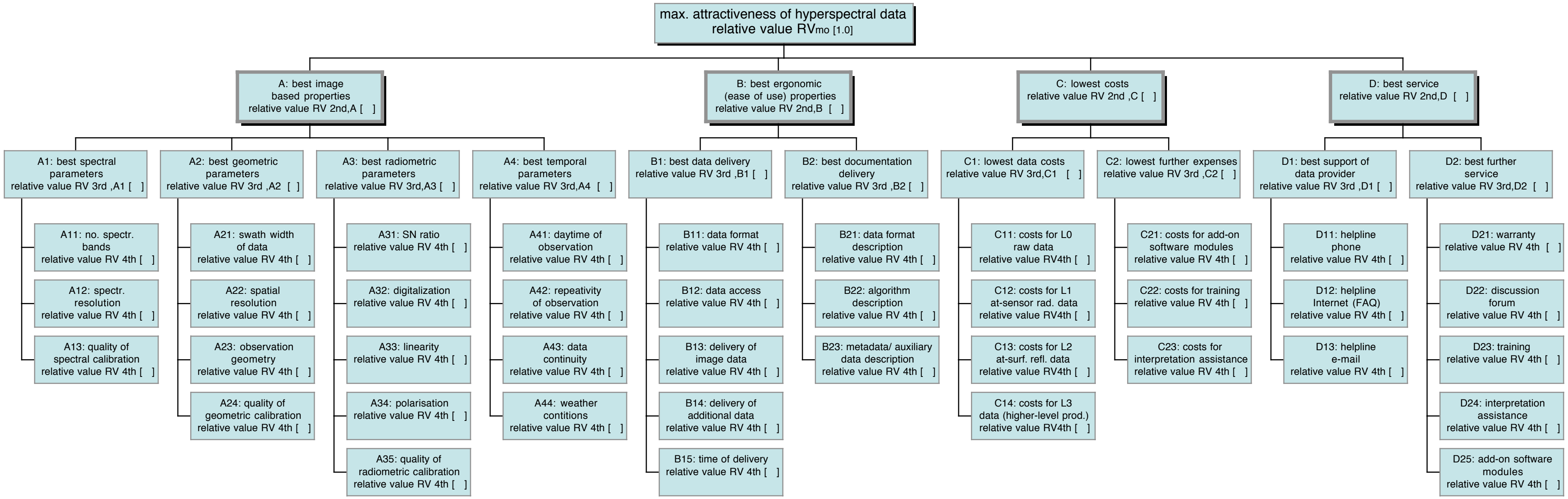
D24: Availability of interpretation assistance

How important is it for the user to have the assistance of an expert from the data provider regarding data handling and interpretation?

D25: Availability of add-on software modules

How important is it for the user to purchase add-on software modules in order to support the user (read and process data) or interpret data?

Objective Model for Hyperspectral (satellite and airborne) Data



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