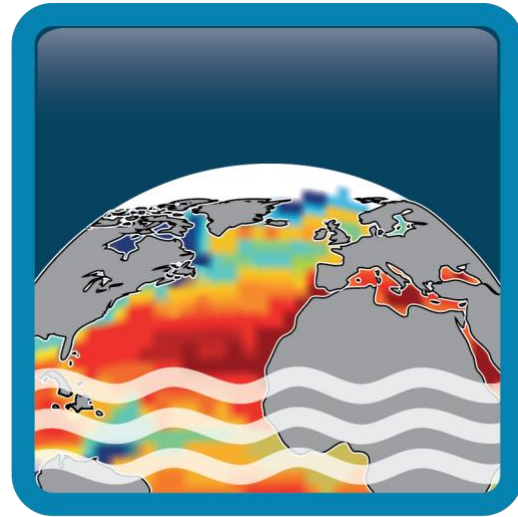


# Sea Surface Salinity Climate Change Initiative Phase 1 Product Specification Document



## Product Specification Document (PSD)

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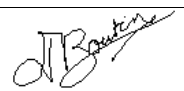


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Sea Surface Salinity Climate Change Initiative  
Phase 1 (ESA CCI Phase 3)  
Product Specification Document

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# 1 Introduction

1

## 2 1.1 Purpose and Scope

3 The purpose of this document is to convert the user requirements, summarized in the User  
4 Requirement Document (URD, [AD01]), into a detailed set of Sea Surface Salinity (SSS) product  
5 specifications of the Seasurface Surface Salinity Climate Change Initiative (CCI+SSS) project.

6 The PSD provides results from a detailed analysis of the requirements of current and future  
7 users of satellite SSS. The survey aims to involve users in the development process of the  
8 CCI+SSS product and to understand their needs prior to the start of the product development.

9 The PSD connects the recommendations from the URD with the aim to produce a detailed set  
10 of product specifications that respond to the user needs and are continuously assessed  
11 against their needs.

12

## 13 1.2 Recommendations for Product Specification

14 The survey conducted by the project was very detailed and the requirements are widely  
15 spread. Therefore, not all aspects of user requirements are covered by the first phase of  
16 CCI+SSS. (which coincides with the third programmatic phase of the whole CCI Program).

17 The goal is to design products that meet as many requirements as possible taking into account  
18 the available options. The recommendations derived here from the user consultation relate  
19 to the need for a growing and diverse user community and their needs:

20 1) **make high-resolution data available**, to account for the high diversity of requirements  
21 for spatio-temporal resolution of the products. The survey results show, that the  
22 resolution needs strongly depend on the analyzed phenomena ranging from original  
23 spatial sampling to 10° and temporal resolution from weekly (daily sampling) to  
24 monthly (15 day sampling).

25 2) **Error specification for L4 SSS product, along with error estimation details**, to account  
26 for the need of broad uncertainty specification. The CCI+SSS product will contain the  
27 random error, systematic error, standard deviation of the bias, as well as good/bad  
28 flags computed from different indicators (Xi2, number of outliers).

29 3) **Compatibility between products (L2,L3,L4, other CCI products)**



## 30 1.3 References

### 31 1.3.1 Applicable Documents

ID	DOCUMENT	REFERENCE
<b>AD01</b>	User Reference Document (URD)	SSS_cci_D1.1_URD-i1r4

### 32 1.3.2 Reference Documents

33 List here all the document that must be read in the conjunction of this document.

ID	DOCUMENT	REFERENCE
<b>RD01</b>	End-to-End ECV Uncertainty Budget	E3UB
<b>RD02</b>	CCI Data Standards 2.0 (17/09/2018)	CCI-PRGM-EOPS-TN-13-009

## 34 1.4 Acronyms

35	AD	Applicable Document
36	ADP	Algorithm Development Plan
37	ATBD	Algorithm Theoretical Basis Document
38	CCI	The ESA Climate Change Initiative (CCI) is formally known as the Global
39		Monitoring for Essential Climate Variables (GMECV) element of the European
40		Earth Watch programme
41	CCI+	Climate Change Initiative Extension (CCI+), is an extension of the CCI over the
42		period 2017–2024
43	CMUG	Climate Modelling User Group
44	DARD	Data Access Requirements Document
45	DOI	Digital Object Identifier
46	E3UB	End-to-End ECV Uncertainty Budget
47	EC	European Commission
48	ECV	Essential Climate Variable
49	EO	Earth Observation
50	EOV	Essential Ocean Variable (of the OOPC)



51	ESM	Earth System Model
52	NASA	National Aeronautics and Space Administration
53	ODP	Open Data Portal
54	PSD	Product Specification Document
55	PUG	Product User Guide
56	PVASR	Product Validation and Algorithm Selection Report
57	PVIR	Product Validation and Intercomparison Report
58	PVP	Product Validation Plan
59	RD	Reference Document
60	SMAP	Soil Moisture Active Passive [mission of NASA]
61	SMOS	Soil Moisture and Ocean Salinity [satellite of ESA]
62	SRD	System Requirements Document
63	SSD	System Specification Document
64	SSS	Sea Surface Salinity
65	SVR	System Verification Report
66	UCR/CECR	Uncertainty Characterisation Report (formerly known as the Comprehensive
67		Error Characterisation Report)
68	URD	User Requirements Document
69		
70		



71

## 2 Product format and metadata

### 72 2.1 Data format

73 Users expressed a clear preference for data in NetCDF format [AD01]. NetCDF has many  
74 advantages, since it is a self-describing, machine independent data format used in a number  
75 of other projects.

76 Consequently, the primary format of CCI+SSS dataset will be NetCDF. CCI, in general produce  
77 data according to the CCI Data Standards Requirements in netCDF-4 classic format using  
78 Climate and Forecasting (CF) Metadata convention [RD02].

79 NetCDF format allows the use of various programming languages and tools to read and  
80 analyze the data, for example MATLAB, the preferred language chosen by the users. File  
81 format and name convention follows the common CCI conventions.

82 The detailed internal format of the NetCDF structure to be used has not been defined yet (this  
83 requires decisions on product names etc.) and will follow in the next version of this document.

### 84 2.2 Filename convention

85 A common CCI filename convention has been developed and CCI+SSS will follow these.

86 ESACCI-<CCI project>-<processing level>-<data type>-<product  
87 string>[-<additional segregator>]-<indicative date>-  
88 [<indicative time>]-fv<file version>.nc

89 For example, a SSS product with a timestep of one day and a spatial grid size of 25 km Version  
90 1.0 for the first November 2018, created from satellite SSS measurements would be named:

91 ESACCI-SEASURFACESALINITY-L4-SSS-MERGED-OI-7DAY-RUNNINGMEAN-  
92 DAILY-25km-20181101-fv1.6.nc

93 Monthly SSS product with a spatial grid size of 25 km with the centered date at the first  
94 November would be named:

95 ESACCI-SEASURFACESALINITYSSS-L4-SSS-MERGED-OI-Monthly-CENTRED-  
96 15Day-25km-20181101-fv1.6.nc





97 The same product but with the centred date at the 15th November:

98 `ESACCI-SEASURFACESALINITYSSS-L4-SSS-MERGED-OI-Monthly-CENTRED-`  
99 `15Day-25km-20181115-fv1.6.nc`

## 100 2.2.1 CCI Project

101 The project identifier is set to SSS

## 102 2.2.2 Processing level

103 During the first phase of the CCI+SSS project a Level 4 (L4) product will be provided, a data  
104 product created from the analysis of lower level satellite data from SMOS, Aquarius and SMAP  
105 that result in gridded high-quality products.

Level	<Processing level> Code	Description
Level 0	L0	Unprocessed and payload data at full resolution. No CCI recommendations regarding formats or content for data at this processing level
Level 1A	L1A	Reconstructed unprocessed instrument data at full resolution, time referenced and annotated with ancillary information, including radiometric and geometric calibration coefficients and georeferencing parameters, computed and appended, but not applied, to L0 data
Level 1B	L1B	Level 1A data processed to sensor units
Level 1C	L1C	Further processed Level 1B data (e.g. correcting radiances, mapping onto a spatial grid)
Level 2	L2	Retrieved environmental variables at the same resolution and location as the level 1 source
Level 2 Pre-processed	L2P	Geophysical variables derived from Level 1 source data at the same resolution and location as Level 1 data, typically in a satellite projection with geographic information. These data are the fundamental basis for higher level CCI products.
Level 3	L3	L2 variables mapped on a defined grid with reduced ancillary data requirements:
Level 3	L3U	Uncollated L3U: L2 data granules remapped to a space grid without combining any observations from overlapping orbits.



Level 3	L3C	Collated L3C: Observations combined from a single instrument into a space-time grid
Level 3	L3S	Super-collated L3S: Observations combined from multiple instruments into a space-time grid
Level 4	L4	Data set created from an analysis of lower level data that result in gridded, gap-free products

106 Table 1 Details of processing level naming conventions taken from [RD02]

107

### 108 2.2.3 Data Type

109 Here, the main data type in the dataset is described, SSS for Sea Surface Salinity.

### 110 2.2.4 Product String

111 The product string depends on the processing level. During the first year it is planned to  
112 submit L4 data, therefore, the product string should be MERGED.

### 113 2.2.5 Additional Segregator

114 The additional segregator describes an optional part of the filename.

## 115 2.3 Data access

116 Based on the User Requirement Survey [AD01], the user community prefer accessing data  
117 using a File Transfer Protocol (FTP) with a dedicated FTP connection. Furthermore, users  
118 require data products available at multiple resolutions. In the first year, two L4 products will  
119 be provided with 1) daily time step based on a 7-day running mean and 2) a monthly mean.

120

121

122



## 123 2.4 Attributes

124 Attributes are metadata stored in the NetCDF files. Here, a distinction is made between global  
125 and variable attributes. The latter are specific for each variable and differ between data- and  
126 NetCDF files. On the other hand, global attributes apply to the whole content of the NetCDF  
127 file.

### 128 2.4.1 Global attributes

Name	Data Type	Description	CCI+SSS Definition
title	string	description of the data set	ESA SMOS CCI Sea Surface Salinity Product
institution	string	Institution where the data was produced	ACRI-ST; LOCEAN
source	string	Original data sources	Source data were: SMOS ESAL2OSv622/CATDS RE05, Aquarius L3 v5.0, SMAP L2 RSS v3.0
history	string	processing history of data set	CCI processing
references	string	references to ATBD	<a href="http://cci.esa.int/salinity">http://cci.esa.int/salinity</a>
tracking_id	string	a Universal Unique Identifier value	
conventions	string	the CF version	CF-1.7
product_version	string	Product version of this data file	n{1,}[,n{1,}], e.g. 01.5
summary	string	a paragraph describing the data set	ESA CCI Sea Surface Salinity
keywords	string	a comma separated list of keywords and phrases	Ocean; Ocean Salinity; Sea Surface Salinity; Satellite
id	string	file name, file identification	e.g. ESACCI- SEASURFACESALINIT YSSS-L4-SSS-MERGED-OI- 7DAY-RUNNINGMEAN-



			DAILY-25km-YYYYMMDD-fv1.6.nc
naming authority	string		European Space Agency - ESA Climate Office
keywords_vocabulary	string		NASA Global Change Master Directory (GCMD) Science Keywords
cdm_data_type	string	The THREDDS data type appropriate for this data set.	Grid
comment	string	Various information about the data set	Data are based on a 7-day running mean objectively interpolated
date_created	string	the date on which the data was created	yyyymmddThhmmssZ
date_modified	string	the date on which the data was modified	
creator_name	string	Name of the creator	ACRI-ST; LOCEAN
creator_url	string	Contact of the creator	<a href="http://cci.esa.int/salinity">http://cci.esa.int/salinity</a>
creator_email	string	Contact of the creator	TBD
project	string	the scientific project that produced the data: "Climate Change Initiative – European Space Agency"	Climate Change Initiative - European Space Agency
geospatial_lat_min	float	Decimal degrees North, Range: -90 to 90	-90.0
geospatial_lat_max	float	Decimal degrees North, Range: -90 to 90	90.0
geospatial_lon_min	float	Decimal degrees East, Range: -180 to 180	-180.0
geospatial_lon_max	float	Decimal degrees East, Range: -180 to 180	180.0



time_coverage_start	string	Time of the first measurement in the data file. Time format is ISO 8601.	yyyymmddThhmmssZ
time_coverage_end	string	Time of the last measurement in the data file. Time format is ISO 8601.	yyyymmddThhmmssZ
time_coverage_duration	string	Length of time coverage	7 days - indicative date as centred date
time_coverage_resolution	string	Time resolution	1 day
standard_name_vocabulary	string	the name of the controlled vocabulary from which variable standard names are taken	NetCDF Climate and Forecast (CF) Metadata Conventions Version 1.7
licence	string	describe the restrictions to data access and distribution	ESA CCI Data Policy: free and open access

129 Table 2 List of global attributes. The contents of the first four columns of this table are reproduced from CCI Data  
130 Standards Issue 2.0 [RD02].

131 In the following Table 3 , the CCI project specific attributes are listed:

Name	Data Type	Description	CCI+SSS Definition
platform	string	Name of the Satellites	MIRAS; SAC-D
sensor	string	Sensor name	SMOS; Aquarius; SMAP
spatial_resolution	string	approximate resolution of the product	25 km
geospatial_lon_resolution	string	Decimal degrees	0.25
geospatial_lat_resolution	string	Decimal degrees	0.25
geospatial_lat_units	string	Degrees North	degrees_north



geospatial_lon_units	string	Degrees East	degrees_east
----------------------	--------	--------------	--------------

132 Table 3 Specific attributes to the CCI+SSS

133

134 2.4.2 Variable attributes

Name	Data Type	Description	CCI+SSS Definition
standard_name	string	the standard name of the variable following the CF convention	sea_surface_salinity,longitude, latitude....
_FillValue	same as variable data type	a value used to indicate array elements containing no valid data	NaN or a number?
units	string	Description of the units (text). Preferable S.I.	psu, degrees_east, degrees_north....
scale_factor	same as variable data type	a factor needed to convert the variable into S.I. units	
add_offset	same as variable data type	offset needed to convert variable into S.I. units	
long_name	string	a free text descriptive variable name	
valid_min	same as variable data type	Minimum valid value for this variable	
valid_max	same as variable data type	Maximum valid value for this variable	
valid_range	same as variable data type	Range of valid values for this variable	
comment	string	important information about the variable	
source	string	original data source	



grid-mapping	string	This attribute is attached to data variables so that variables with different mappings may be present in a single file.	
auxiliary_data_N	string	A string describing additional data used to produce this variable	

135 Table 4 List of variable attributes. The contents of the first three columns of this table are  
136 reproduced from CCI Data Standards 2.0 Document [RD02].

137 Based on these conventions, the file will contain a

- 138 1. map of SSS
- 139 2. a corresponding map of uncertainties (random, systematic error, standard deviation  
140 of the bias)
- 141 3. a corresponding map of quality flags (good/bad flags computed from Xi2 and number  
142 of outliers)
- 143 4. a corresponding map of the number of outliers
- 144 5. Explained Variance PCTVAR=  $SSS\_error/SSS\_variability?$
- 145 6. global attributes

146

147 The L4 files will contain a regular lat-lon map, the products at the different time steps (daily,  
148 monthly) files share the same names for variables that appear in both products as well as  
149 dimensions (latitude, longitude, SSS, QF etc.):

150 Dimensions:

151 time = 1

152 lat = 584

153 lon = 1388

154

155 lat

156 Size: 584x1

157 Dimensions: lat

158 Datatype: single



159           Attributes:

160                    \_FillValue     = NaN

161                    long\_name     = 'latitude'

162                    units           = 'degrees\_north'

163                    standard\_name = 'latitude'

164    valid\_range = -90.f, 90.f

165

166    lon

167           Size:   1388x1

168           Dimensions: lon

169           Datatype: single

170           Attributes:

171                    \_FillValue     = NaN

172                    long\_name     = 'longitude'

173                    units           = 'degrees\_east'

174                    standard\_name = 'longitude'

175    valid\_range = -180.f,180.f

176

177    time

178           Size:   1x1

179           Dimensions: time

180           Datatype: single

181           Attributes:

182                    \_FillValue     = NaN





183                    long\_name    = 'time'  
184                    units            = 'days since 1970-01-01 00:00:00 UTC'  
185                    standard\_name = 'time'  
186  
187  
188 total\_nobs  
189                    Size: 1388x584  
190                    Dimensions: lon,lat  
191                    Datatype: int16  
192                    Attributes:  
193                           \_FillValue    =0  
194                    long\_name    = Number of SSS in time interval'  
195 coordinates    = ' lon lat'  
196                    units            = 'NA'  
197                    standard\_name = 'number\_of\_observations'  
198                    valid\_min =0  
199                    valid\_max=10000  
200                    valid\_range=0.f, 10000.f  
201                    scale\_factor=1  
202                    add\_offset=0  
203  
204 sss  
205                    Size: 1388x584  
206                    Dimensions: lon,lat



207 Datatype: single

208 Attributes:

209        \_FillValue     = NaN

210        long\_name     = 'Unbiased merged Sea Surface Salinity'

211        coordinates   = 'lon lat'

212        units         = 'pss'

213        standard\_name = 'sea\_surface\_salinity'

214        valid\_min =0

215        valid\_max=50

216        valid\_range=0.f, 50.f

217        scale\_factor=1

218        add\_offset=0

219 sss\_bias

220        Size: 1388x584

221        Dimensions: ,lon,lat

222        Datatype: single

223 Attributes:

224        \_FillValue     = NaN

225        long\_name     = 'Bias in Sea Surface Salinity.'

226        coordinates   = 'time lon lat'

227        standard\_name       = 'sea\_surface\_salinity\_bias'

228        units         = 'pss'

229        valid\_min =-100

230        valid\_max=100



231 valid\_range=-100.f, 100.f

232 scale\_factor=1

233 add\_offset=0

234

235 sss\_bias\_std

236 Size: 1x1440x720

237 Dimensions: time,lon,lat

238 Datatype: float

239 Attributes:

240 \_FillValue = NaN

241 long\_name = 'Standard Deviation of the Bias in Sea Surface Salinity.'

242 coordinates = 'time lon lat'

243 standard\_name = 'sea\_surface\_salinity\_bias\_std'

244 units = 'pss'

245 valid\_min =0

246 valid\_max=100

247 valid\_range=0.f, 100.f

248 scale\_factor=1

249 add\_offset=0

250

251

252

253

254



255

256

257

258

259

260

261

262

263

264

265        sss\_random\_error

266    Size: 1388x584

267        Dimensions:,lon,lat

268        Datatype: single

269        Attributes:

270            \_FillValue        = NaN

271            long\_name        = 'Sea Surface Salinity Random Error'

272            coordinates       = ' lon lat'

273            standard\_name       = 'sea\_surface\_salinity\_random\_error'

274            units               = 'pss'

275            valid\_min =0

276            valid\_max=100

277            valid\_range=0.f, 100.f

278            scale\_factor=1



279                   add\_offset=0

280

281

282           noutliers

283   Size:   1388x584

284           Dimensions: lon,lat

285           Datatype:   int16

286           Attributes:

287                   \_FillValue   = 0

288                   long\_name   = "Count of the Number of Outliers within this bin cell"

289                   coordinates = ' lon lat'

290                   standard\_name   = 'number\_of\_outliers'

291                   units           = 'NA'

292                   valid\_min =0

293                   valid\_max=10000

294                   valid\_range=0.f, 10000.f

295                   scale\_factor=1

296                   add\_offset=0

297

298           pct\_var

299   Size:   1388x584

300           Dimensions: lon,lat

301           Datatype:   single

302           Attributes:



303                    \_FillValue     = NaN

304                    long\_name     = 'Percentage of Explained Sea Surface Salinity Variance by the  
305 Sea Surface Salinity Standard Error'

306                    coordinates   = 'time lon lat'

307                    standard\_name   = 'percentage\_variance'

308                    units           = '%'

309                    valid\_min =0

310                    valid\_max=100

311                    valid\_range=0.f, 100.f

312                    scale\_factor=1

313                    add\_offset=0

314

315

316            sss\_qc

317    Size:   1388x584

318            Dimensions: lon,lat

319            Datatype: int16

320            Attributes:

321                    \_FillValue     = 0

322                    long\_name     = 'Sea Surface Salinity Quality. 1=good; 0=Bad'

323                    coordinates   = 'lon lat'

324

325                    valid\_min =0

326                    valid\_max=1



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329



## 330 3 Spatial and temporal resolution, grid 331 format and projection

332 The majority of users have spoken out for a high resolution on temporal and spatial scale with  
333 the highest accuracy possible at this resolution. Here some users wanted highly processed  
334 data products (L3 and L4) while other users prefer to have low level products (L2).

335 Within Phase 1, the CCI+SSS project want to make highly processed L4 data accessible. Lower  
336 processed data products based on the different satellites can be accessed via ESA or other  
337 websites. Within Phase 2 the CCI+SSS project is planning to provide also debiased L2 and L3  
338 data products.

### 339 3.1 Spatial resolution

340 To analyze at least mesoscale processes, many users require higher spatial resolution (1-100  
341 km) than users, who focus on large scale processes (> 100 km). Based on the URD and based  
342 on the capabilities of the different L-Band sensors, a specification of interpolated 25 km  
343 resolution data based on 75 km resolution seems achievable.

### 344 3.2 Temporal resolution

345 Corresponding to the requirements regarding spatial resolution, the requirements for  
346 temporal resolution varied dependent on the research interest. There was no clear majority  
347 for the queried resolutions but a tendency to at least weekly data products.

348 Based on the URD and the capabilities of the sensors (SMOS & SMAP - 3 day observing cycle,  
349 Aquarius 7 days), it seem sensible to offer a product with daily timesteps with a 7-day window.

350 For users who require lower temporal resolution a second product will be available with a  
351 resolution of one month centred 1) at the first of each month and 2) centred at the 15th of  
352 each month. The latter is comparable with climatological means.

### 353 3.3 Grid format, map projection and coverage

354 The majority of users have spoken out for data with a global coverage on a regular latitude-  
355 longitude grid. The first CCI+SSS product files will be delivered on the global (Cylindrical)  
356 Equal-Area Scalable Earth Grid 2.0 (EASE 2), since it is used for other satellite SSS products  
357 and therefore favors the compatibility between different data products.





358

## 4 Error budget and uncertainties

359 In order to characterize errors in the final product, analysis of the various sources of error  
360 need to be conducted. Divergent user responses indicate that there is no one way of  
361 communicating uncertainties that will suit everyone.

362 But the majority of users require random noise and systematic errors for each grid point as  
363 well as detailed information about the error budget and bias correction.

### 364 4.1 Characterizing error and error budgeting

365 Error characterization and budgeting is described in the End-to-End ECV Uncertainty Budget  
366 document, but to summarize, the uncertainty can be generally grouped into the following  
367 primary categories:

- 368 ● uncertainties due to the measurement instrument
- 369 ● systematic errors in the retrieval algorithm
- 370 ● unknown uncertainties (e.g., spatial-temporal sampling errors)

371 Errors in each of these sources need to be propagated through the processing pixel by pixel  
372 resulting in an error budget for each SSS grid point.

373 During the first phase of the CCI+SSS project, data sets will include information about random  
374 noise and systematic errors, number of outliers and standard deviation of the bias. Error  
375 estimation for the L4 CCI+SSS product is described in the End to End ECV Uncertainty  
376 Document.

### 377 4.2 Data format for uncertainty information

378 The uncertainty products will be stored directly alongside the product in NetCDF, encoding  
379 the uncertainty information as additional variable in NetCDF and bin them to their associated  
380 variable by attributes and naming convention. This will be compatible with the CF  
381 conventions.

382



383

## 5 Quality indicators and flags

### 384 5.1 Quality indicators

385 Based on the user requirements [AD001], the L4 CCI+SSS product must have quality  
386 indicators. Users prefer to have data flagged dependent on their quality. In the case of the L4  
387 product released during the first phase of the CCI+SSS project it is not possible to specify each  
388 quality flag since the data sets are created from lower level data that result in gridded, higher  
389 quality products. For production, a detailed documentation is needed including all steps in  
390 the data and product delivery chain. Furthermore, uncertainty information is essential for the  
391 users.

### 392 5.2 Flags

393 The detailed composition of the list of flags has not been defined yet and will follow in the  
394 next version of this document.

395

396



397

## 6 Summary

398 The aim of this document was to transform the user requirements summarized in the URD  
399 into a set of product specifications for input into Task 2 (algorithm development etc.) of the  
400 CCI+SSS project.

- 401 1. Two CCI+SSS products on a regular latitude longitude grid will be provided during the  
402 first year of the CCI+SSS project (Table 5).
- 403 2. Data products will include uncertainty information (random noise + systematic error  
404 (bias), standard deviation of the systematic error, number of outliers, Chi2 of applied  
405 correction to homogenize SMOS, SMAP and Aquarius).
- 406 3. Additional information (SST, Sea Ice) will not be provided with the products at this  
407 stage of the project.
- 408 4. Quality indicators will be provided in the L4 data.
- 409 5. At each step of processing, the error will be quantified, propagated through the  
410 processing chain and well documented.
- 411 6. Updates of the products will be given 2 times during the first year of the CCI+SSS  
412 project.
- 413 7. Data will be produced in CF-compliant NetCDF-v4 format
- 414 8. The NetCDF data will be distributed through an FTP site.

415



Level	Decorrelation timescales	Spatial Smoothing scale	Temporal timesteps	Spatial grid size	Coverage
L2	-	-	-	-	-
L3	-	-	-	-	-
L4	weekly	50 km (TBC)	daily (based on 7-day running means)	25 km	global 01/2010-10/2018
L4	30 days	50 km (TBC)	centred at each 1st and 15th day of the month	25 km	global 01/2010-10/2018

416 Table 5 Summary of the specifications of the first dataset CCI+SSS project (dataset year1). L2 and L3 products  
417 will be provided during the second delivery.

418  
419  
420



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Phase 1 (ESA CCI Phase 3)

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*End of Document*