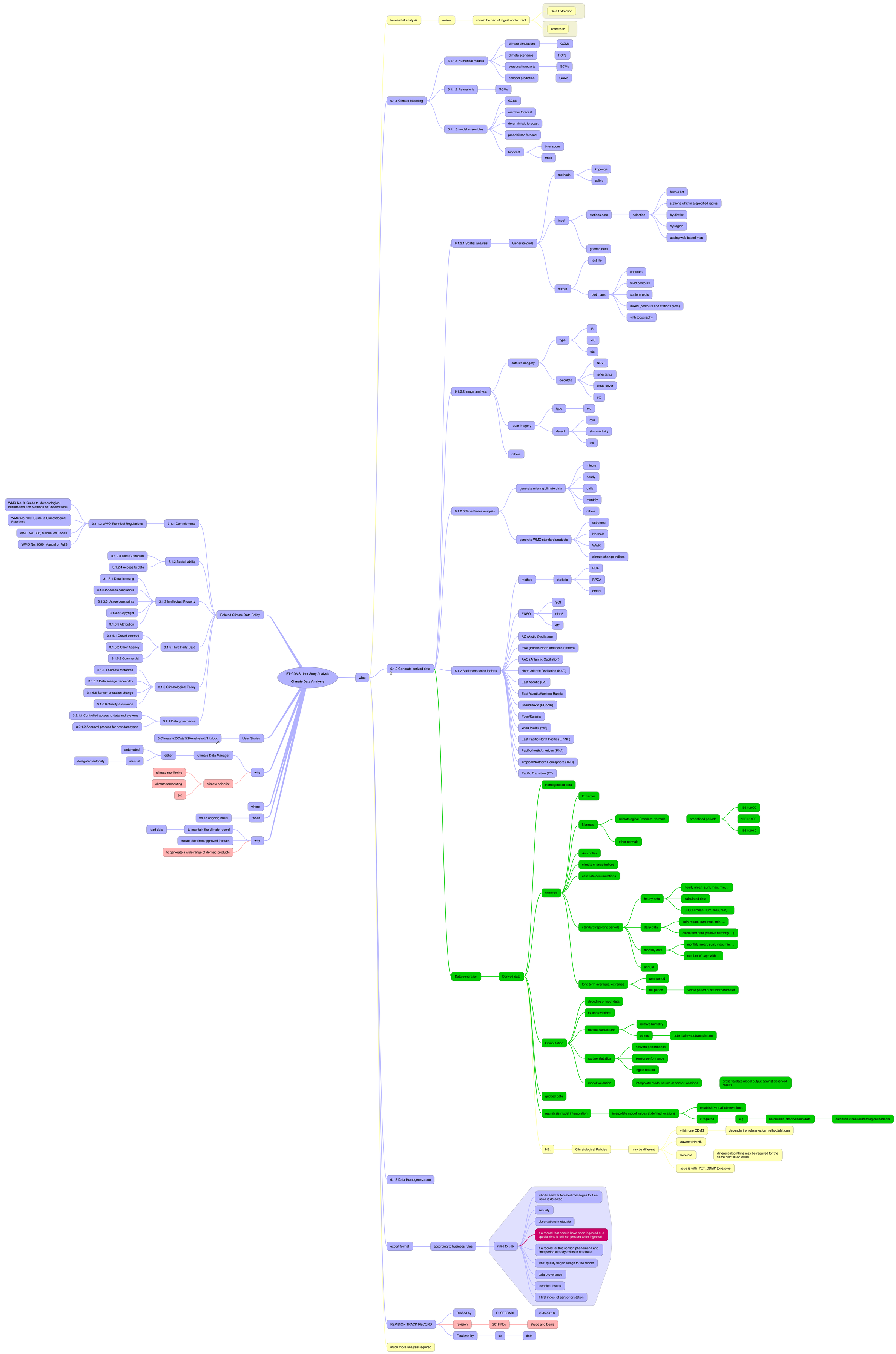
ET-CDMS User Story Analysis
Climate Data Analysis
what
from initial analysis
review
should be part of ingest and extract
Data Extraction
Transform
6.1.1 Climate Modeling
6.1.1.1 Numerical models
climate simulations
GCMs
climate scenarios
RCPs
seasonal forecasts
GCMs
decadal prediction
GCMs
6.1.1.2 Reanalysis
GCMs
6.1.1.3 model ensembles
GCMs
member forecast
deterministic forecast
probabilistic forecast
hindcast
brier score
rmse
6.1.2 Generate derived data
6.1.2.1 Spatial analysis
Generate grids
methods
krigeage
spline
input
stations data
selection
from a list
stations whithin a specified radius
by district
by region
useing web based map
gridded data
output
test file
plot maps
contours
filled contours
stations plots
mixed (contours and stations plots)
with topography
6.1.2.2 Image analysis
satellite imagery
type
IR
VIS
etc
calculate
NDVI
reflectance
cloud cover
etc
radar imagery
type
etc
detect
rain
storm activity
etc
others
6.1.2.3 Time Series analysis
generate missing climate data
minute
hourly
daily
monthly
others
generate WMO standard products
extremes
Normals
WWR
climate change indices
6.1.2.3 teleconnection indices
method
statistic
PCA
RPCA
others
ENSO
SOI
nino3
etc
AO (Arctic Oscillation)
PNA (Pacific-North American Pattern)
AAO (Antarctic Oscillation)
North Atlantic Oscillation (NAO)
East Atlantic (EA)
East Atlantic/Western Russia
Scandinavia (SCAND)
Polar/Eurasia
West Pacific (WP)
East Pacific-North Pacific (EP-NP)
Pacific/North American (PNA)
Tropical/Northern Hemisphere (TNH)
Pacific Transition (PT)
Data generation
Derived data
Homogenised data
statistics
Extremes
Normals
Climatological Standard Normals
predefined periods
1951-2000
1961-1990
1981-2010
other normals
Anomolies
climate change indices
calculate accumulations
standard reporting periods
hourly data
hourly mean, sum, max, min, ...
calculated data
3H, 6H mean, sum, max, min, ...
daily data
daily mean, sum, max, min, ...
calculated data (relative humidity, ...)
monthly data
monthly mean, sum, max, min, ...
number of days with ...
annual
long term averages, extremes
user period
full period
whole period of station/parameter
Computation
decoding of input data
fix abbreviations
routine calculations
relative humidity
others
potential evapotranspiration
routine statistics
network performance
sensor performance
ingest related
model validation
interpolate model values at sensor locations
cross validate model output against observed results
gridded data
reanalysis model interpolation
interpolate model values at defined locations
establish 'virtual' observations
if required
e.g.
no suitable observations data
establish virtual climatological normals
NB:
Climatological Policies
may be different
within one CDMS
dependant on observation method/platform
between NMHS
therefore
different algorithms may be required for the same calculated value
Issue is with IPET_CDMP to resolve
6.1.3 Data Homogeniezation
export format
according to business rules
rules to use
who to send automated messages to if an issue is detected
security
observations metadata
if a record that should have been ingested at a special time is still not present to be ingested
if a record for this sensor, phenomena and time period already exists in database
what quality flag to assign to the record
data provenance
technical issues
if first ingest of sensor or station
REVISION TRACK RECORD
Drafted by
R. SEBBARI
29/04/2016
revision
2016 Nov
Bruce and Denis
Finalized by
xx
date
much more analysis required
Related Climate Data Policy
3.1.1 Commitments
3.1.1.2 WMO Technical Regulations
WMO No. 8, Guide to Meteorological Instruments and Methods of Observations
WMO No. 100, Guide to Climatological Practices
WMO No. 306, Manual on Codes
WMO No. 1060, Manual on WIS
3.1.2 Sustainability
3.1.2.3 Data Custodian
3.1.2.4 Access to data
3.1.3 Intellectual Property
3.1.3.1 Data licensing
3.1.3.2 Access constraints
3.1.3.3 Usage constraints
3.1.3.4 Copyright
3.1.3.5 Attribution
3.1.5 Third Party Data
3.1.5.1 Crowd sourced
3.1.5.2 Other Agency
3.1.5.3 Commercial
3.1.6 Climatological Policy
3.1.6.1 Climate Metadata
3.1.6.2 Data lineage traceability
3.1.6.5 Sensor or station change
3.1.6.6 Quality assurance
3.2.1 Data governance
3.2.1.1 Controlled access to data and systems
3.2.1.2 Approval process for new data types
User Stories
6-Climate%20Data%20Analysis-US1.docx
who
Climate Data Manager
either
automated
manual
delegated authority
climate scientist
climate monitoring
climate forecasting
etc
where
when
on an ongoing basis
why
to maintain the climate record
load data
extract data into approved formats
to generate a wide range of derived products

this component is different from the "derived climate data" 4.5 which is for data generation such as monthly from daily and so on