*map2loop* input requirements 14/5/2020

Mark Jessell, UWA

1. **Data access mechanism**
   1. **Geology machine readable options, any of:**
   * Postgis
   * WxS (WFS/WCS *NOT WMS*)
   * OPenDAP
   * NetCDF
   * Or in fact any direct internet data access protocol. Preferably one that can specify use a bounding box to avoid massive data downloads
   * ESRI Shapefiles & Mapinfo Tab files
   1. **Geophysics machine readable options:**
   * GA’s *geophys\_utils* python library provides enough access for now (for Australian Data)
   1. **Drillhole data access:**
   * SQL with geospatial capabilities
   1. **DTM:**
   * Sourced from one of a number of online servers (e.g. opentopography.org)
2. **Data inputs (shapefiles or direct access unless stated otherwise)**

In some length-based EPSG projection system

* 1. **Geology Polygons:**
  + At least two levels of stratigraphic coding (e.g. formation/group)
  + Lithological description that allows us to discriminate between sills, other intrusive units, and sedimentary/volcanic formations (could be 2 fields to achieve this)
  + An absolute/relative age estimate or max/min estimates for each formation/unit
  + Optional:
    - Master sorted list of stratigraphic units to resolve relative age ambiguities (csv format)
    - If cover sequence exists (shallow basin, regolith):
      * an extra polygon layer defining limits of cover sequence
      * geotif raster of depth of cover
  1. **Fault and fold axial trace polylines (fold axial traces are optional):**
  + Faults and fold axial traces can be same file, if field with discriminator is present
  + Field with unique identifier for each fault, fold axial trace
  + Fold axial trace synform/antiform/syncline/anticline information
  + Optional:
    - if fault dips/dip direction are available, great!
    - if sense of displacement is available, great!
  1. **Structural observation points:**
  + Field that discriminates between observation types (bedding, cleavage, lineation etc.)
  + Dip
  + Dip direction or strike
  + Optional:
    - Polarity of bedding
  1. **Mineral deposits (optional):**
  + Commodity
  1. **Sections (Optional):**
  + Layer with section trace polyline
  + Layer with faults and stratigraphic contacts as polylines with:
    - Field to discriminate faults and stratigraphic contacts
    - Field to label faults and stratigraphic contacts
  + Layer with three points defining top-right, bottom-right, top-left in section coordinates (distance along section, depth)
  1. **Company or survey drillhole data (Optional):**
  + Standard drillhole data with from/to pairs & survey information
  + Stratigraphic data if for immediate
  + Database schema!
  + Optional:
    - Machine readable dictionaries and/or freeform text descriptions of lithology