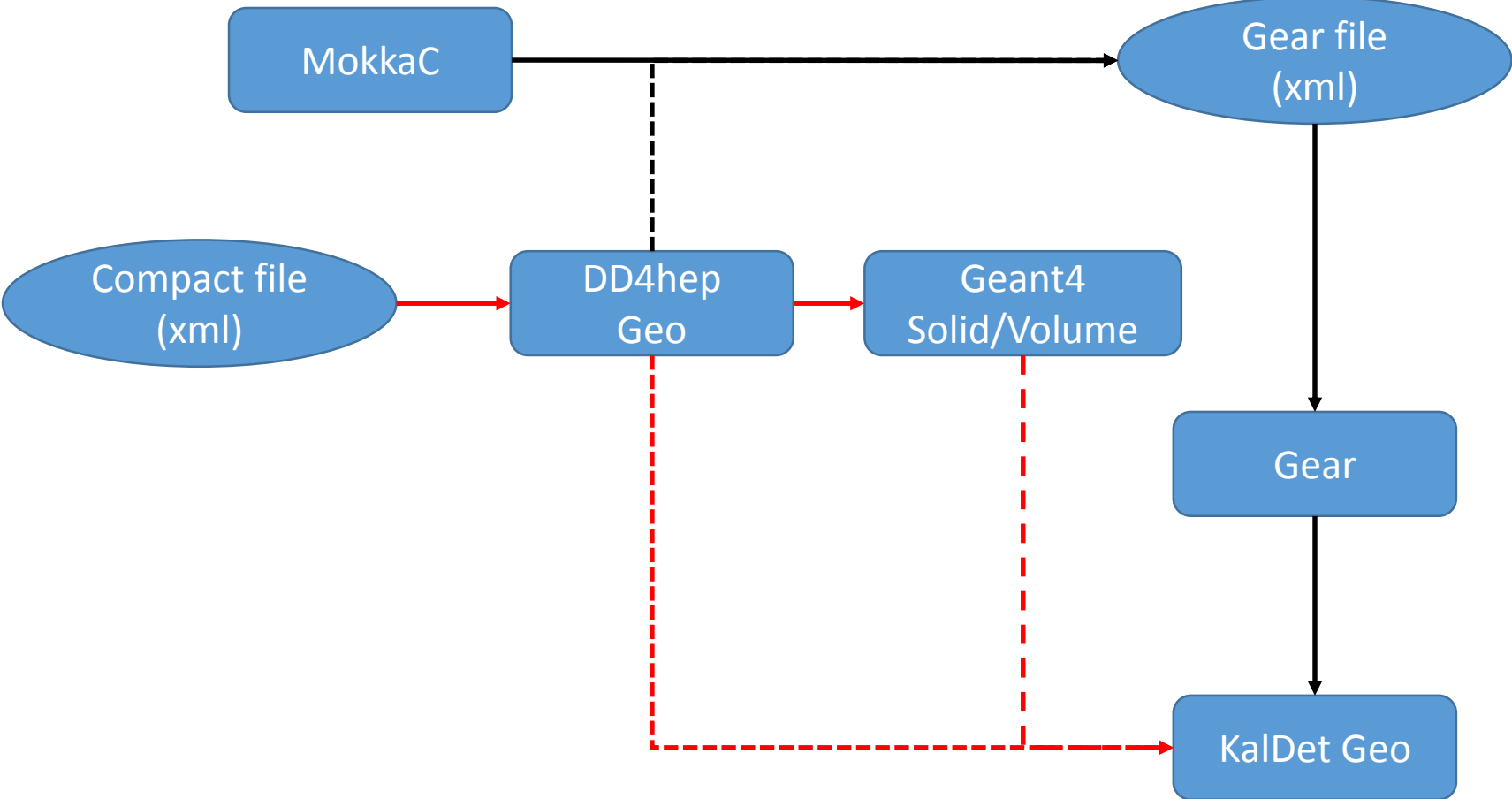


Geometry for Reconstruction in CEPCSW



Roadmap

- Gaudi service for geometry parameters
 - /CEPCSW/Detector/GeoSvc existing

```
class GeoSvc: public extends<Service, IGeoSvc> {
public:
    GeoSvc(const std::string& name, ISvcLocator* svc);
    ~GeoSvc();

    // Service
    StatusCode initialize() override;
    StatusCode finalize() override;

    // IGeoSvc
    dd4hep::DetElement getDD4HepGeo() override;
    dd4hep::Detector* lcdd() override;

    const gear::ZPlanarParametersImpl* getVXDParameters() override;
    const gear::GearParametersImpl* getDetParameters(std::string name) override;

private:
    // DD4hep XML compact file path
    Gaudi::Property<std::string> m_dd4hep_xmls{this, "compact"};

    //
    dd4hep::Detector* m_dd4hep_geo;
};

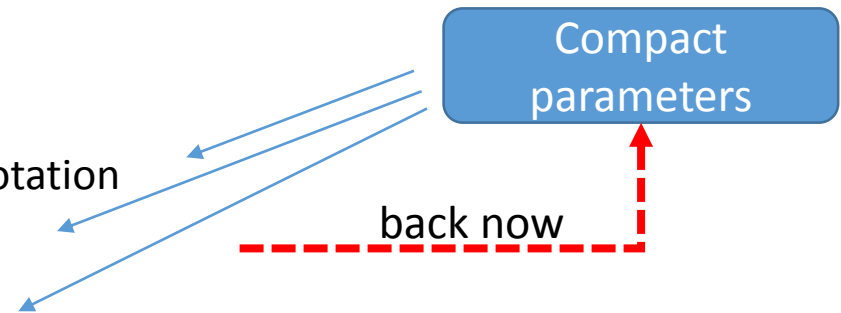
#endif GeoSvc_h
```

Roadmap

- Geometry parameters pack
 - GearParametersImpl etc. (as external classes), Gear will keep only these parts in CEPCSW
 - In future, new classes by ourselves?

- Converter

- DD4hep geometry
- Geant4 volumes
 - Physical volumes → position & rotation
 - Logical volumes → material
 - Solid → size



- Usage

- `const gear::VXDParameters& pVXDDetMain = gearMgr.getVXDParameters();`
- `onst gear::VXDParameters& pVXDDetMain = m_geoSvc->getVXDParameters();`

Status

- GeoSvc test ok!
 - DD4hep geometry
 - world & daughters points ok
 - Position, rotation, size & material X
 - Geant4 solid/volumes points
 - world & daughters points ok
 - Position, rotation, size & material ok
 - Back to compact parameters in progress
- KalDet
 - from GearMgr to GeoSvc in progress