

Some 'Standard' IceTray Services

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The 'phys-services' Project

- * A collection of standard services available to IceCube software modules.
- * Currently contains three services: `I3RandomService`, `I3ParticleDataService`, and `I3Calculator`
- * Also contains an `I3PhysicsModule` class which is an `I3Module` with convenience functions for accessing services and Frame data.
- * Additional services and functionality are planned.

An IceTray 'Service'

* An object available to all the modules. Several 'essential' services come with IceTray already: Logging, Boxes, Configuration, Execution

* Called this way by a module, for instance:

```
{  
  I3RandomService& random =  
    I3ContextAccess< I3RandomService > ::GetService(GetContext(),  
                                                    "Random");  
}
```

* For an I3PhysicsModule the syntax is simpler

```
{  
  I3RandomService& random = GetRandom();  
}
```

* Implemented right now using I3TRandomService which wraps TRandom. Anything that inherits from I3RandomService can be used instead.

Can easily, dynamically switch implementations.

* I3RandomService -> Methods for getting random numbers from standard distributions. Just used the TRandom interface. Abstract interface implemented in I3TRandomService.

* I3ParticleDataService -> Methods for manipulating particle types. Getting masses, lifetimes, etc. Places for conversion between PDG, Geant, F2k and 'dataclasses' formats. No abstract interface here, but could be factored out seamlessly if needed.

* I3Calculator -> Methods for geometric calculations involving tracks and oms. Like some rdmc library functions. Will be extended.

Should I Implement My Code as a Service?

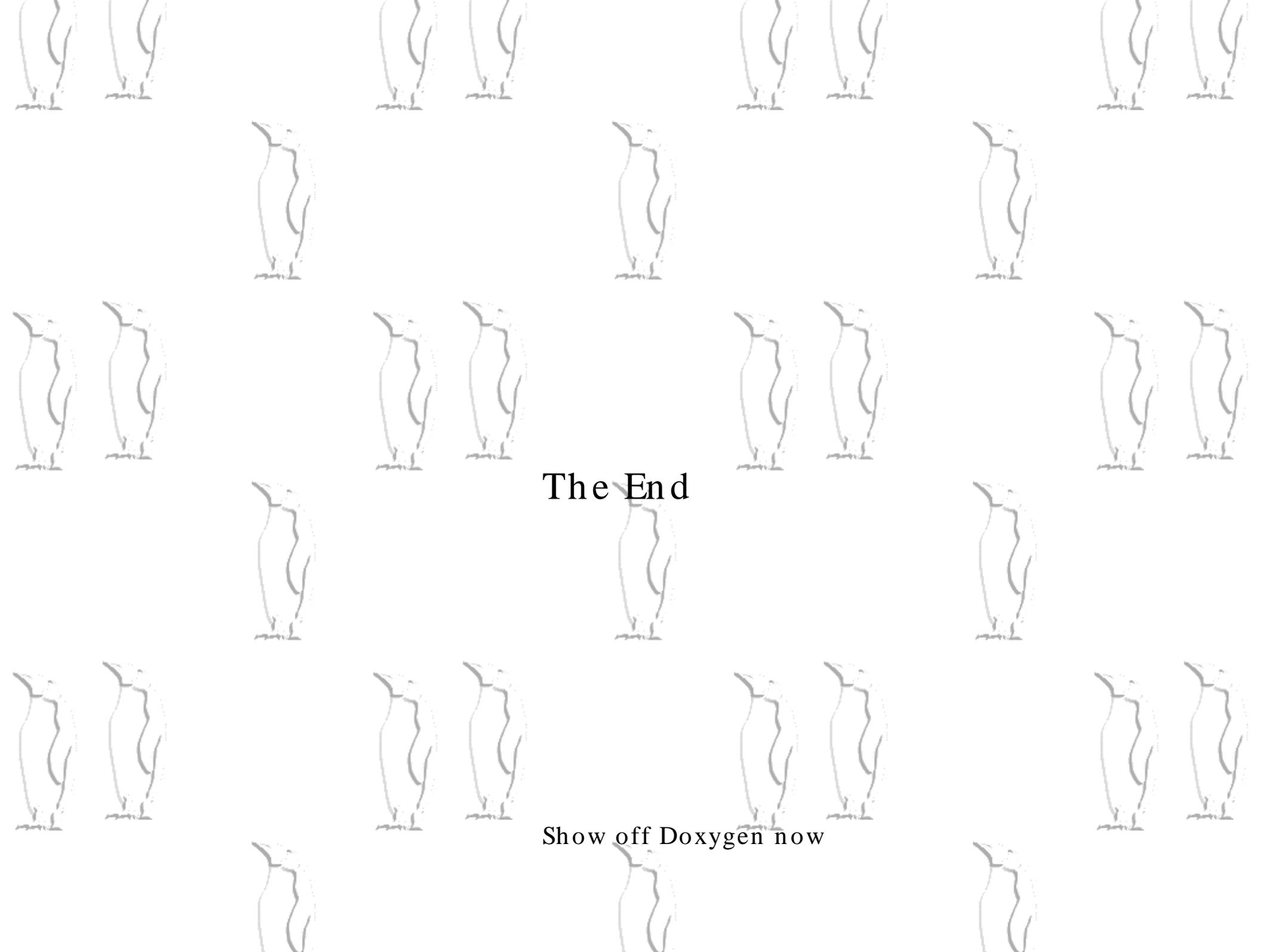
- Would you like to dynamically switch implementations of your code? (e.g. changing random number generators)
- Will other modules use the code? Can easily avoid writing duplicate code.

Getting Started

* Download DATACLASS-APP and build it.

* Example usage in examples-offline

* Visit the phys-services documentation site:
<http://glacier.lbl.gov/offline/phys-services/>



The End

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