JManager

The template class JManager resides in the name space JROOT and constitutes an auxiliary class for the creating and bookkeeping of many ROOT histograms, graphs, etc. It simply extends the functionality of an STL map. It has a master ROOT histogram, graph or other TObject that can be defined at construction. It then creates "slave" objects on the fly (using TObject::Clone) of which the name is obtained by replacing the wild card character in the name of the master by the corresponding key. All objects can be written to file with a single call. The basic implementation could be as follows.

```
template<class JKey_t, class JValue_t>
class JManager:
  public public JPointer<JValue_t>,   // master
  public std::map<JKey_t, JValue_t*>  // STL map
{
  JManager(JValue_t* master);         // specify master

  JValue_t* operator[](JKey_t key);   // creates new slave if needed

  void Write(const char* file_name);   // save data to file

  ..
};
```

The usual map operator is customised. In this, the availability of the object associated with the given key is checked. If necessary, a new object is cloned from the master. The name of this clone is determined from the name of the master by replacing the wild card character by the key. Finally, a pointer to the object associated to that key is returned.
For example.

```
  JManager<int, TH2D> H2(new TH2D("H2[%]",  NULL, 10, -1.0, +1.0, 10, -1.0, +1.0));

  H2[12345678]->Fill(x, y);
```

The default wild card is the character '%'; it can differently be defined at construction of a JManager.
As specified by STL map, the usual less-than operator < should be defined for the key. In addition, to create a name for the cloned object, the standard output stream operator std::ostream<< should be defined.

```
  JManager<int, TH1D> H1(new TH1D("M_[%]", NULL, 100, 0.0, 100.0e6));

  while (..) {
    ..
    for (JDAQSuperFrame::const_iteratorhit = frame->begin(); hit != frame->end(); ++hit) {
      H1[frame-getModuleID()]->Fill(hit->getT());}
    }
  }

  H1.Write("example.root");
```