



Short update on UI

Makoto Asai (SLAC)

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- A UI command could be refused by several reasons.
 1. Refused by G4UImanager
 - Command not found, illegal application state, etc.
 - Incorrect type of parameter, parameter out of range, etc.
 - Based on the type of refusal, corresponding error code (integer) is returned in addition to some error messages. Execution of a macro file is interrupted.
 2. Refused by a messenger
 - By some reason a command could be refused (more precisely a command is not executed) within SetNewValue() method of a messenger
 - Error messages could be shown by G4cout, G4cerr or G4Exception, but there was no way to return an error code.
 - Error messages could be easily overwhelmed by tons of other printout. **Execution of a macro file was not interrupted** because the return code is zero.
- A new way of returning an error code (with error message) from the messenger's SetNewValue() method is added.
 - SetNewValue() is a void method. This is unchanged for the sake of preserving users code.

New methods in G4UIcommand base class

- G4UIcommand::CommandFailed(G4int errCode, G4ExceptionDescription& ed)

```
void G4ParticleGunMessenger::SetNewValue
                                (G4UIcommand * command,G4String newValues)
{
  if( command == ionCommand )
  {
    if (fShootIon) {
      IonCommand(newValues);
    } else {
      G4cout << "Set /gun/particle to ion before using /gun/ion command" << G4endl;
    }
  }
}
```

New methods in G4UIcommand base class

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```
void G4ParticleGunMessenger::SetNewValue
                                (G4UIcommand * command,G4String newValues)
{
  if( command == ionCommand )
  {
    if (fShootIon) {
      IonCommand(newValues);
    } else {
      G4ExceptionDescription ed;
      ed << "Set /gun/particle to ion before using /gun/ion command";
      command -> CommandFailed( 123, ed );
    }
  }
}
```