Coq Implementation

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1 Quantum Teleportation Circuit

2 Quantum Teleportation Source Code

```
OPENQASM 2.0;

gate x a { U(pi,0,pi) a; }
gate z a { U(0,0,pi) a; }
gate h a { U(pi/2,0,pi) a; }

qreg q[3];
creg c0[1];
creg c1[1];
creg c2[1];

// we are trying to send q[0]

// step 0
// prepare an arbitrary qubit
U(0.3,0.2,0.1) q[0];

// step 1
// make a Bell pair
h q[1];
CX q[1],q[2];

// step 2
CX q[0],q[1];
h q[0];

// step 3
measure q[0] -> c0[0];
measure q[1] -> c1[0];

if(c0==1) z q[2];
if(c1==1) x q[2];

// now q[0] teleported to q[2]
```