

Appendix A: Code of Port I

A.1 Cape_Ipopt_net.h

```
// Cape_Ipopt_net.h : Head file for Cape_Ipopt_net.cpp
```

```
#ifndef __CAPEIPOPTNET_H_
#define __CAPEIPOPTNET_H_

#include "GCOIpoptWrapper_NET.h"

int Cape_Ipopt_net(ICapeMINLP *pMinIp);

#endif
```

A.2 Cape_Ipopt_net.cpp

```
// Cape_Ipopt_net.cpp : an interface of IPOPT to CAPE-OPEN ICapeMINLP
```

```
#include "StdAfx.h"
#include "Cape_Ipopt_net.h"

#include "IpUtils.hpp"
#include "IpAlgBuilder.hpp"
#include "IpIpoptCalculatedQuantities.hpp"
#include "IpOrigIpoptNLP.hpp"
#include "IpTNLPAdapter.hpp"

#include "CapeTNLP_net.hpp"

#ifdef OLD_C_HEADERS
# include <math.h>
#else
# include <cmath>
#endif

#include <time.h>

extern "C" {
#include <stdio.h>
}

#include "IpIpoptApplication.hpp"

ICapeMINLP *pMinIp;

int Cape_Ipopt_net(ICapeMINLP *pMinIp)
{
    using namespace Ipopt;

    SmartPtr<TNLP> cape_nlp = new CCapeTNLP(pMinIp);
    SmartPtr<IpoptApplication> app = new IpoptApplication();

    return (int) app->OptimizeTNLP(cape_nlp);
}
```

