**asn1c:**

 **asn1c** (c = compiler) – tool generates C code for parsing ASN1 (BER, DER, …)

read more: asn1c-usage.pdf, asn1c-quick.pdf

**asn1c installation:**

**Install on own computer (Unix)**

**sudo apt-get update -y**

**sudo apt-get install -y asn1c**

**Or install from: https://github.com/vlm/asn1c**

**Install on aisa (from Windows)**

Connect to **aisa.fi.muni.cz** using Putty or ssh, with **xlogin** and faculty password

Create home/local(if does not exist), home/Lab4 (use mkdir)

Copy **copy\_to\_aisa.zip** toyour **home/local** (use WinSCP to copy, or scp)

Change directory **cd Lab4**Unzip with: **unzip copy\_to\_aisa.zip**Change access permissions: **chmod** **777** **asn1-install.sh**Install compiler with: **./asn1-install.sh**

 Test whether installed properly: **asn1c -help**

**asn1c – basic usage:**

0. Define ASN1 grammar - created example **sod.asn1**

1. Prepare the C and H files (using asn1 compiler) for the ASN.1 structures:

**asn1c –fnative-types sod.asn1**

Compiled AlgorithmIdentifier.c

Compiled AlgorithmIdentifier.h

Compiled LDSSecurityObjectVersion.c

Compiled LDSSecurityObjectVersion.h

Compiled DigestAlgorithmIdentifier.c

Compiled DigestAlgorithmIdentifier.h

Compiled LDSSecurityObject.c

Compiled LDSSecurityObject.h

Compiled DataGroupHash.c

Compiled DataGroupHash.h

Compiled DataGroupNumber.c

Compiled DataGroupNumber.h

Symlinked /usr/local/share/asn1c/ANY.h -> ANY.h

Symlinked /usr/local/share/asn1c/ANY.c -> ANY.c

Symlinked /usr/local/share/asn1c/INTEGER.h -> INTEGER.h

Symlinked /usr/local/share/asn1c/NativeEnumerated.h -> NativeEnumerated.h

Symlinked /usr/local/share/asn1c/INTEGER.c -> INTEGER.c

2. Use structures in program - **sod\_sample.c**

3. Compile a sample application:

Remove converter\_example.c: **rm converter\_example.c**Compile: **gcc \*.c -o LDSview -I. -DPDU=LDSSecurityObject**And execute: **./LDSview**

LDSview will parse lds.bin according structure defined in sod.asn1