

# ASN.1, LTE & XML Products

DELIVERING THE TECHNOLOGY YOU  
NEED TO CONNECT **THINGS**



## Just Clicks Away

With **ASN.1 Studio**, you literally need just a few mouse clicks to take any ASN.1 specification and actually run an application that encodes and decodes ASN.1 messages based upon it.

ASN.1 Studio can produce source code that demonstrates how to encode or decode any message whose type is defined in an ASN.1 specification. This generated demonstration source code can be copy-pasted into your application and the message sample fields can simply be replaced with the actual fields that a message should contain.

ASN.1 Studio can "export" its projects to a format that is understood by a target language compiler, linker or IDE, such as Microsoft Visual Studio. This further simplifies the process of building your ASN.1-based application.

**OSS Nokalva**  
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## Technology at work for you

**OSS Nokalva®, Inc.** a privately held company located in Somerset, New Jersey, has been offering the highest quality standards-based software, support and services since 1988. OSS has been instrumental in shaping and developing **ASN.1, LTE, XML**, and biometric standards and standards-based solutions.

## Flexible solutions for your business needs

### OSS ASN.1 PRODUCTS

All of the **OSS ASN.1 Tools** include **ASN.1 Studio™**, an intuitive ASN.1 IDE, and runtime libraries supporting the BER, CER, DER, PER, CPER, UPER, OER, COER, XER, E-XER, and JSON encoding rules.

The **OSS ASN.1 Tools for C** is a powerful development toolkit for rapidly building applications using ASN.1, this product features a powerful ASN.1:2015 capable compiler, a run-time library that is the fastest on the market, support for partial/selective decoding, and a rich collection of utilities to simplify and speed your development.

The **OSS ASN.1 Tools for C++** is the right choice if you use object oriented concepts in your application. The ASN.1/C++ compiler maps ASN.1 syntax into true C++ classes. The runtime libraries include C++ runtime classes to encode and decode application messages.

The **OSS ASN.1 Tools for Java** is a platform independent solution. The ASN.1/Java compiler maps ASN.1 syntax into Java classes. The runtime jar files facilitate encoding, decoding and various other operations on application messages.

The **OSS ASN.1 Tools for C#** is the solution for you if you would like to build ASN.1 applications for .NET Framework, .NET Core, Universal Windows Platform, and Xamarin. The compiler maps ASN.1 syntax into C# classes, and

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# ASN.1, LTE & XML Products

## Specialized Products

**ASN-1Step** offers our intuitive IDE, ASN.1 Studio for ASN.1 analysis and development. It is a powerful tool for working with ASN.1 messages in human readable format, featuring syntax checking, message validation, encoding and decoding, and much more.

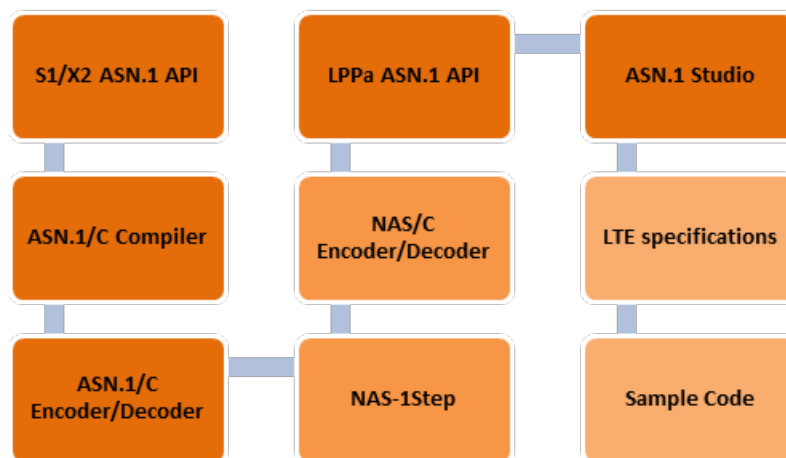
**ASN.1->XSD** converts your ASN.1 specification into an XSD schema that can be used by XSD applications to exchange XML messages with ASN.1 applications.

The **PER Analyzer** add-on tool is highly recommended for protocol analysis and parsing PER (Packed Encoding Rule) messages at runtime. It provides detailed information about the PER encoding while allowing you to directly control the output format.

**Compile-And-Go-Library (CAGL)** is the best solution for dynamically compiling your ASN.1 specification at runtime – a perfect solution for CDR (Call Detail Record) processing applications. Use this runtime library to create, encode, and decode messages without having to rebuild your application.

**Lean Encoder/Decoder (LED)** is a great choice for deploying applications on resource constrained platforms such as embedded systems.

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**LTE Products** - Get all you need to support LTE ASN.1 and NAS development, all in one place, and all from a company whose commitment to quality and service you know you can rely on.

## OSS LTE PRODUCTS

Building on our 30 years of ASN.1 expertise and our high-performance PER encoder/decoder, OSS offers several LTE solutions which are add-on products that go beyond support for low-level ASN.1 development: our S1/X2 ASN.1 API, our LPPa ASN.1 API, our NAS Encoder Decoder Library, and our NAS-1Step product. These 3GPP Release 8 - 14 compliant products offer the same performance, reliability, and quality that companies worldwide know they can expect from OSS.

The **OSS LTE Products** present a complete, powerful, yet easy to use LTE ASN.1 and NAS product suite that delivers everything you need to jump start your LTE development together with LTE schema, sample code, and technical support. The LTE Products available include:

- **ASN.1/C Tools with S1/X2 & LPPa**
  - ASN.1/C Compiler
  - ASN.1/C Encoder/Decoder Library
  - ASN.1 Studio IDE
  - S1/X2 ASN.1 API, including samples targeting eNodeB and MME development
  - LPPa ASN.1 API, including samples targeting eNodeB and E-SMLC development
- **NAS-1Step**, a visual tool for debugging NAS messages
- **NAS/C Encoder/Decoder Library.**

## OSS FAST & COMPACT XML

Now you can take advantage of two complementary, proven technologies – XML and binary encoding. OSS offers its Fast & Compact XML solution: **Efficient XML Interchange (EXI) Tools.** OSS' EXI Tools available for C, C++, and C#, efficiently compress your XML using the EXI standard. You achieve cost reduction without losing XML's many benefits such as inherent self-description and interoperability.