



**UNISYS**

**Unisys Law Enforcement Message Switch  
(LEMS)**

# Specific Industry Experience

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- First NCIC/NLETS message switch +50 years ago
- Currently providing LEMS and services to 7 large clients, serving 150K police officers protecting 40M citizens
- Several clients maintained for 4 decades or more
- First Cloud (Azure-based) message switch in the US
- Build and/or maintain related CJIS systems for CCH, firearms, background checks, SOR, etc.

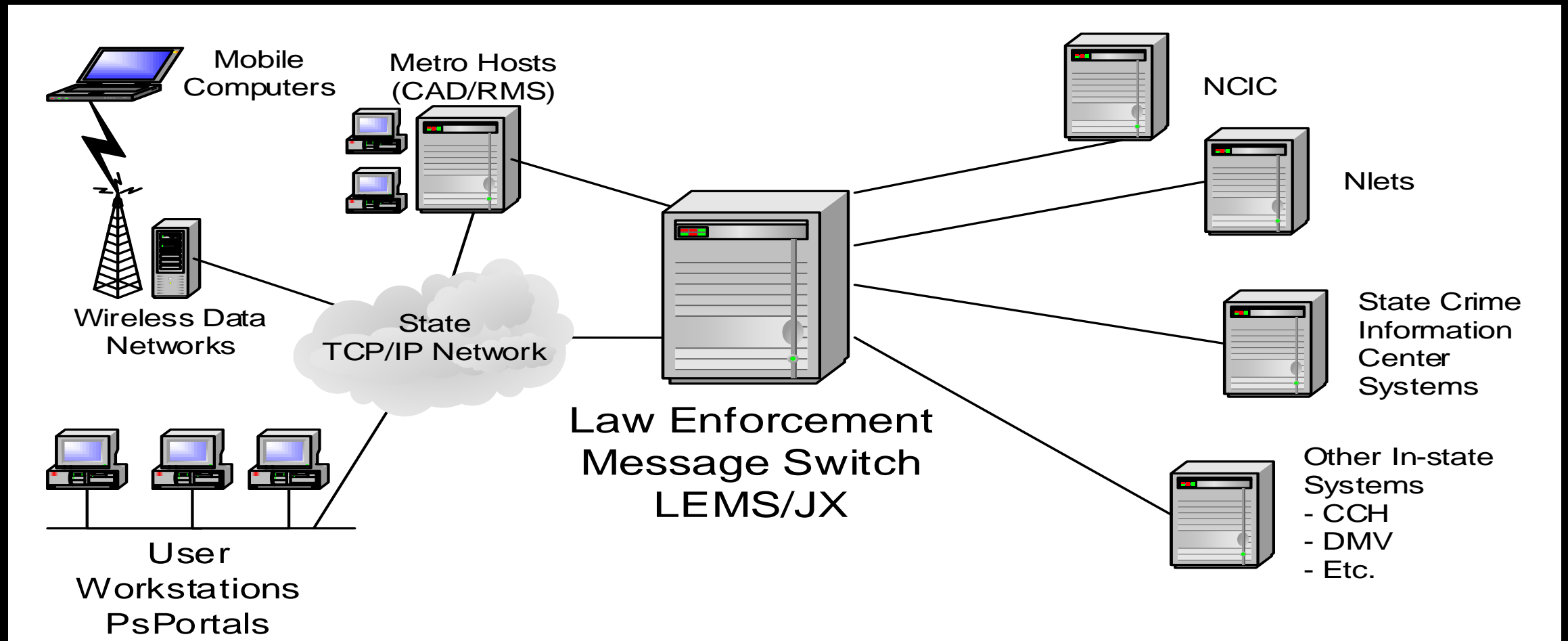
# What is LEMS?

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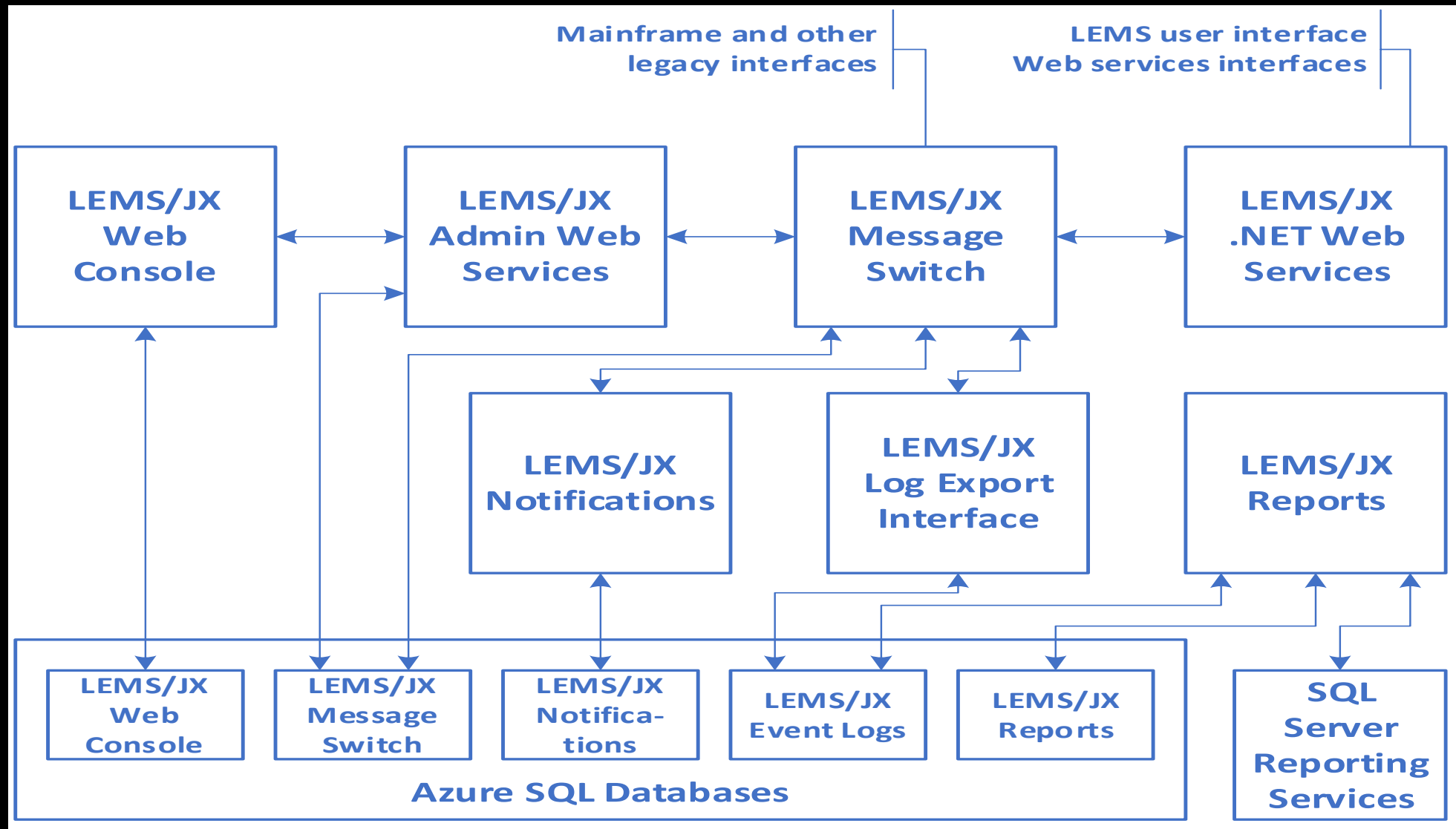
- Every US state and territory (and a few large cities) have a “LEMS” type “switch”
- LEMS is software which routes messages from police agencies to critical databases and back (*Is this car stolen?*)
- Switch is usually owned by State Police or Public Safety Dept.
- Unisys reliability 99.99% with 2-3 billion messages yearly
- Each LEMS about \$5-10M to install
- Often combined with Cloud adoption & other services

# LEMS/JX

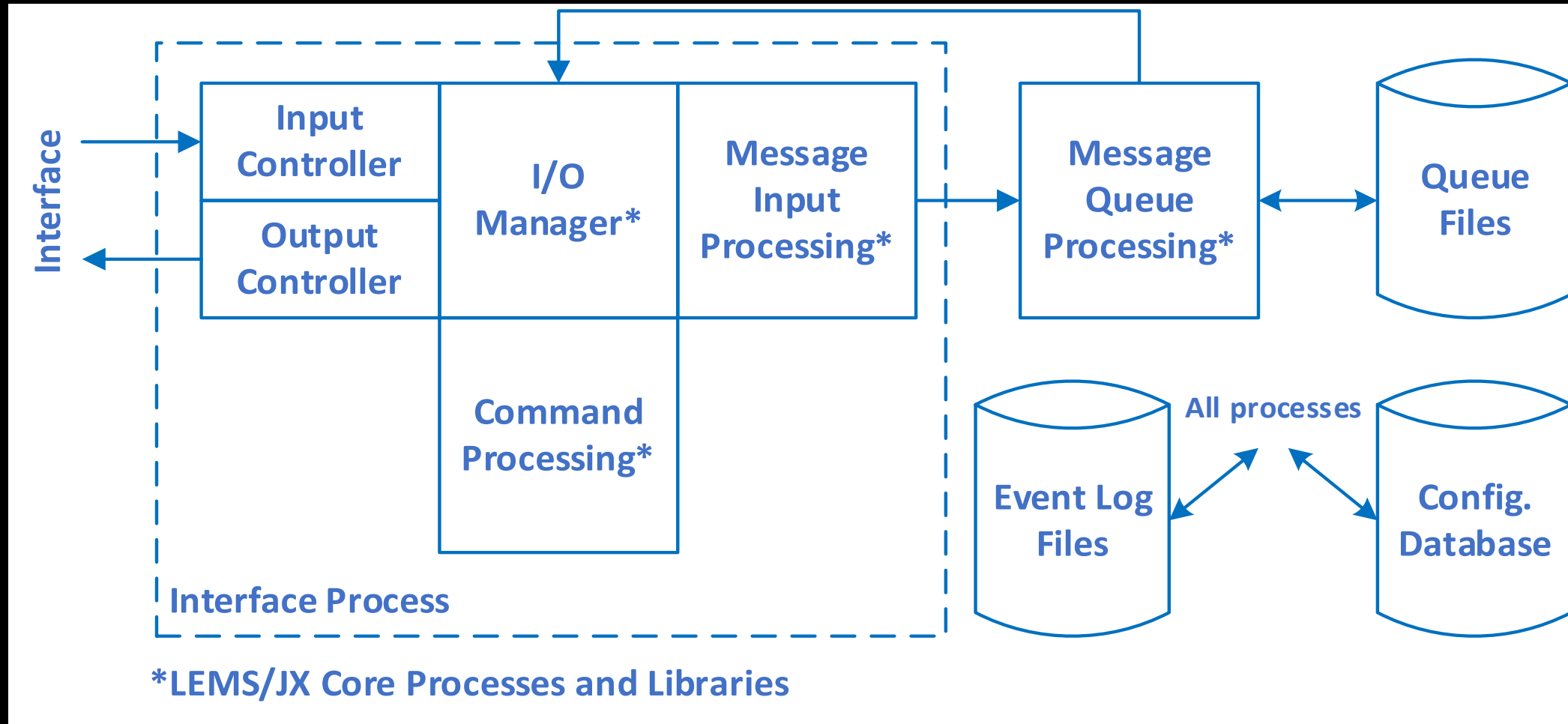
Law Enforcement Message Switch/Justice Exchange



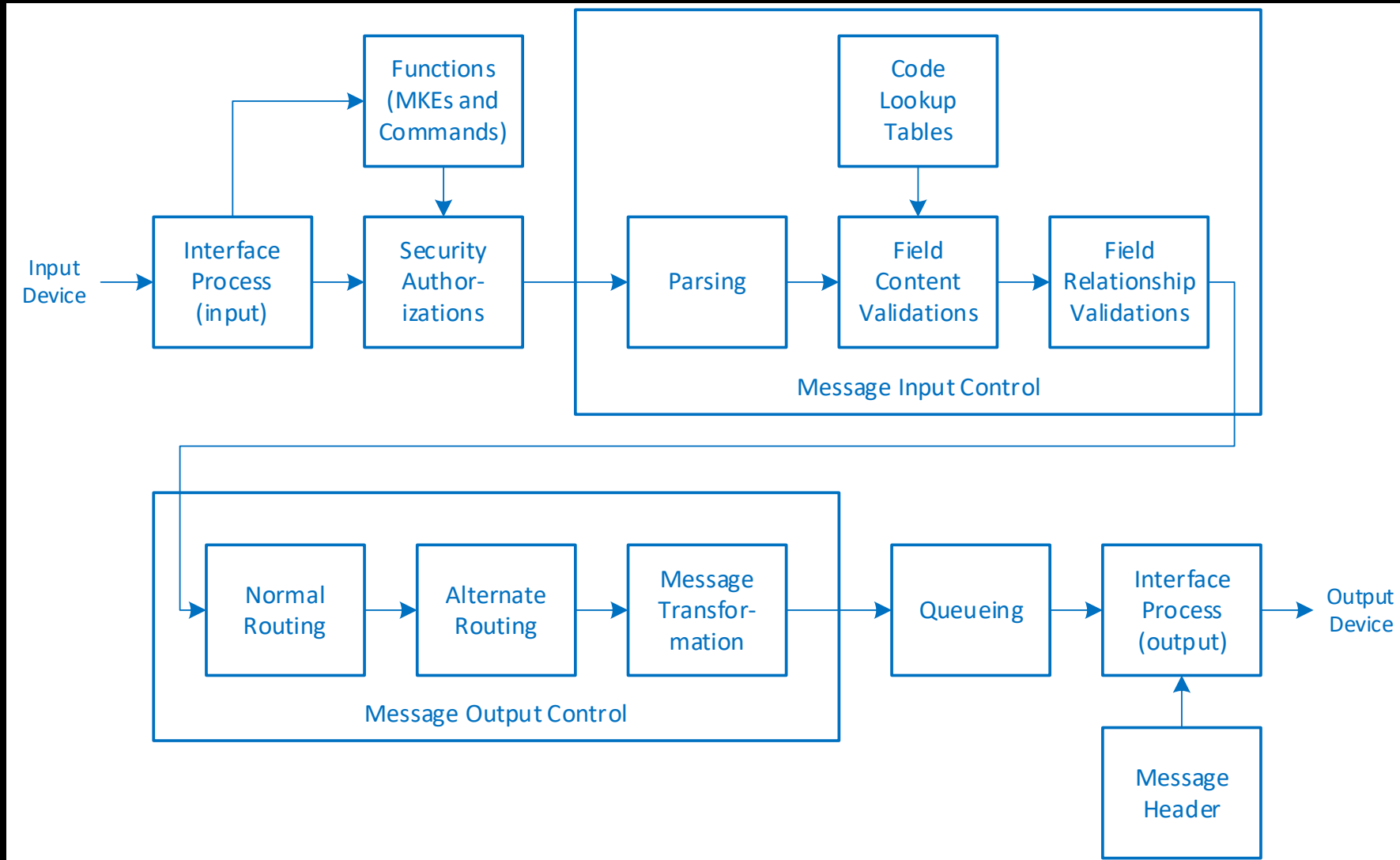
# LEMS/JX components



# LEMS/JX message switch high-level software architecture



# Message processing



# Message processing

**Parsing** – Using dozens of parsing algorithms

**Field content validation** – Using lists, almost one hundred algorithms

**Field relationship validation** – E.g., if field A must have field B

**Routing** – Content based, to multiple destinations

**Merging** – Assembling multiple messages into a single message

**Formatting & transformation** – Table driven, XML style sheets (XSLT)

**Acknowledgment** – Acceptance or rejection of message



# Key LEMS/JX attributes

Supports a wide variety of message formats and protocols

Provides powerful and flexible configurable message processing and interface capabilities

Guarantees delivery of messages with high availability and high performance

Includes comprehensive capabilities for secure government information sharing standards and technologies

Supports mission critical, 24x7 operations and compliance with FBI CJIS Security Policy

# LEMS/JX features and benefits summary

LEMS/JX Feature	Benefit to Agency
Table driven configuration	Unmatched flexibility in configuring users; devices; interfaces; security; message routing, formatting, validation
Supports multiple, configurable interfaces using modern, standards-based and legacy interface technologies	Web Services, XML (NIEM/GJXDM), IBM MQ, MSMQ, ODBC, TCP/IP sockets, Telnet, SFTP
Configurable message parsing and validation	Verifies received data complies with edit rules and business rules
Extensive, configurable message routing, spawning, and reformatting capability augmented with XML style sheets (XSLT)	Excellent flexibility in message routing and reformatting to accommodate new or changed interfaces and requirements
Disk-based, prioritized store-and-forward message queues	No messages are lost; high priority messages get through first

# LEMS/JX features and benefits summary (cont.)

LEMS/JX Feature	Benefit to Agency
Configurable message and event logging	Significant events/messages logged for reports, security audit, historical archive, and statistical analysis
Configurable user/device security	Helps prevent unauthorized use; limits permitted functions based on role
Extensible to support future connection to other systems	Easily extensible to support future systems as they are implemented
Works seamlessly with Integrated Justice Information Sharing	Provides improved justice information sharing; no need to discard/re-architect message switch
Proven solution, in production for over two decades	Reliability, availability, scalability, capability you can count on

# Unisys LEMS/JX related services

Project management

Requirements  
assessment and  
specification

System design  
specification

Migration/transition  
plans

Custom  
enhancements and  
interfaces

Installation and  
configuration

Integration and  
testing plans,  
procedures, and  
execution

Training

On-site production  
cutover support

Annual support

Other crime  
information center  
systems

# eAgent 2.0 user interface

The interface features a sidebar with navigation options: Find a Form, Forms Menu, Favorite Forms, Recent Forms, PER, VEH, LPQ, GUN, DL Scanner, and SmartKeys. The main content area is divided into sections for form input and message management.

**Form Input Section:**

- Message Key:** EW
- Caution/Medical:** (2 N) CAUTION AI
- Control:**
  - ORI:** TNTBI0014
  - Control Field:** ETEST
- Case:**
  - \* Orig. Case No.:** (20 ANS) ORIGINATING AGENCY CASE NUMBER
  - \* Offense:** (24 AN) OFFENSE CODE

**Message Detail Section:**

- PERSON 12345678 PA** 2016-10-04 10:03:53 (Buttons: Reopen, Open with)
- RESP QWA.TNNCIC000** 2016-10-04 10:04:05 (Buttons: Forward with AM)

**Inbox Table:**

	Key	Subject	Date
Today	1	2	
<input type="checkbox"/>	PER	TNTBI0098 12345678 PA - STATUS: EXPIRED	4 10:01 AM
<input type="checkbox"/>	YR	YR.TNTBI0098 - THE RECORD BELOW IS IN PROCESS OF BEING CONFIRMED	8:28 AM
<input type="checkbox"/>	YR	TNTBI0098 BANNER, BRUCE DCI W030005144 11223344 BHEAD TNTBI00...	8:28 AM
<input type="checkbox"/>	PER	TNTBI0098 BRUCE, WHITE 19600101 M - MKE/SEXUAL OFFENDER	8:21 AM

# Case Study: LEMS-led State of Nevada Public Safety CJIS Transformation

## Business Challenge

- Modernize or replace majority of public safety software applications
- Need for cloud services provider and system integrator
- Fix user management limitations between Commercial/Gov Clouds

## Solution

- Unisys-led team to deliver a long-term, multi-phase effort to modernize multiple Nevada DPS including:
  - Law Enforcement Message Switch
  - Computerized Criminal History System
  - Firearms Management Solution
  - Civil Background Check System
  - One-Stop User Portal with Single Sign-On Capability



## Expected Results

- ✓ **First-ever statewide CJIS compliant environment leveraging GovCloud**
- ✓ Will meet FBI CJIS Security Policy Standards
- ✓ User-Friendly
- ✓ Greatly improved citizen & employee experience