

Southern Software

{ North Little Rock Police Department Interface to
N-DEx & Standards

Our Commitment

- ⌘ Southern Software is committed to the GJXDM & N-DEx standards, not just for the State of North Carolina but for each state we serve.
- ⌘ You have our support whether you adopt an existing standard such as GJXDM, N-DEx or you choose to go another route.

Our Experience with Information Sharing Initiatives

- ⌘ N-DEx (National Data Exchange)
- ⌘ LEXS (*LEISP Exchange Specifications)
- ⌘ NIEM (National Information Exchange Model)
- ⌘ GJXDM (Global Justice XML Data Model)
- ⌘ IEPD (Information Exchange Package Documentation)
- ⌘ SCIEx (South Carolina Information Exchange)
- ⌘ LInX (Law Enforcement Information Exchange)
- ⌘ IJIS (Integrated Justice Information Systems) Affiliate

*LEISP (Law Enforcement Information Sharing)

Experience with LInX

- ⌘ State of North Carolina
- ⌘ NGC project
- ⌘ Developed by NGC
- ⌘ RMS & CAD adaptors were reviewed by Southern Software developers
 - ⌘ For correct mappings
 - ⌘ For change tracking
 - ⌘ For security
- ⌘ Adaptors will become stale upon schema update

Experience with Global JXDM

- ‡ State of South Carolina
- ‡ SRC SCIEEx project
- ‡ Implemented provided IEPD
- ‡ Not a federal standard but rather a limited scope implementation using GJXDM
- ‡ JXML export to the SCIEEx web service necessitated the first release of SS Interface Manager which now handles all state XML exports from our systems. (AL, SC, VA)
- ‡ X.509 server & client certificates for transport security
- ‡ Every Southern Software customer in South Carolina has this capability and we maintain the export routines as we update our schemas

Experience with Global JXDM

Table	Column	Datatype	Length	JXML Mapping
tblIncident				SSIncident(Derived From SuperObject)
	IncidentNumber	nvarchar	12	SSIncident\Incident\ActivityID\ID
	DateCreated	datetime	8	SSIncident\Document\DocumentDescriptiveMetadata\DocumentCreationDate
	CreatedBy	nvarchar	255	SSIncident\Document\DocumentDescriptiveMetadata\DocumentCreation.Person\PersonName\PersonFullName
	IncidentDate	datetime	8	SSIncident\Incident\ActivityDate
	IncidentTime	datetime	8	SSIncident\Incident\ActivityTime
	LastUpdatedDate	datetime	8	SSIncident\Document\DocumentDescriptiveMetadata\DocumentLastModifiedDate
	ExceptionalClearance	nvarchar	100	SSIncident\Incident\IncidentExceptionalClearanceCode
	ExceptionalClearanceDate	datetime	8	SSIncident\Incident\IncidentExceptionClearanceDate
	ReportingOfficerID	nvarchar	100	SSIncident\Incident\ActivityOfficial.Enforcement\EnforcementOfficialBadgeID\ID
	ReportingOfficerName	nvarchar	255	SSIncident\Incident\ActivityOfficial.Enforcement\PersonName\PersonFullName
	ClearingOfficerName	nvarchar	255	SSIncident\Incident\ActivityClearer.Person\PersonName\PersonFullName
	DateIncidentEnded	datetime	8	SSIncident\Incident\ActivityEndDate
	TimeIncidentEnded	datetime	8	SSIncident\Incident\ActivityEndTime
	DispatcherName	nvarchar	255	SSIncident\Incident\ActivityDispatcher\PersonName\PersonFullName
	ApprovingOfficerName	nvarchar	255	SSIncident\Incident\ActivityApprovalPerson\PersonName\PersonFullName
	ReportingArea	nvarchar	100	SSIncident\Locale\LocaleZoneName
	PatrolZone	nvarchar	100	SSIncident\Locale\LocalePoliceGridText
	OtherZone	nvarchar	100	SSIncident\Locale\LocalePoliceBeatText
	Location	nvarchar	255	SSIncident\Incident\Location\LocationAddress\AddressFullText
	LocationLandmark	nvarchar	255	SSIncident\Incident\Location\LandmarkText
	LocationStreetNumber	nvarchar	50	SSIncident\Incident\Location\LocationAddress\LocationStreet\StreetNumberText
	LocationDirectional	nvarchar	2	SSIncident\Incident\Location\LocationAddress\LocationStreet\StreetPredirectionalText
	LocationStreet	nvarchar	255	SSIncident\Incident\Location\LocationAddress\LocationStreet\StreetName
	LocationLocation	nvarchar	255	SSIncident\Incident\Location\LocationAddress\LocationSecondaryUnitText
	LocationMailingAddress	nvarchar	255	SSIncident\Incident\Location\LocationAddress\AddressMailDeliveryUnitText
	LocationCity	nvarchar	150	SSIncident\Incident\Location\LocationAddress\LocationCityName
	LocationState	nvarchar	2	SSIncident\Incident\Location\LocationAddress\LocationStateCode.USPostalService
	LocationZipCode	nvarchar	9	SSIncident\Incident\Location\LocationAddress\LocationPostalCodeID
	StolenVehicles	tinyint	1	SSIncident\Incident\IncidentStolenVehicleQuantity
	RecoveredVehicles	tinyint	1	SSIncident\Incident\IncidentRecoveredVehicleQuantity
	Narrative	ntext	16	SSIncident\Incident\ActivityDescriptionText
	CaseStatus	nvarchar	100	SSIncident\Incident\ActivityStatus\StatusText
	DateNotified	datetime	8	SSIncident\Incident\IncidentResponse\ServiceCallDispatchedDate
	TimeNotified	datetime	8	SSIncident\Incident\IncidentResponse\ServiceCallDispatchedTime
	DateArrived	datetime	8	SSIncident\Incident\IncidentResponse\ServiceCallArrivedDate
	TimeArrived	datetime	8	SSIncident\Incident\IncidentResponse\ServiceCallArrivedTime
	DateClearedScene	datetime	8	SSIncident\Incident\IncidentResponse\ServiceCallClearedDate
	TimeClearedScene	datetime	8	SSIncident\Incident\IncidentResponse\ServiceCallClearedTime
	IncidentType	nvarchar	100	SSIncident\Incident\IncidentCategory\IncidentCategoryTypeText
	AssignedToName	nvarchar	255	SSIncident\Incident\ActivityInvestigator\PersonName\PersonFullName

Experience with N-DEx

- ⌘ State of Arkansas
- ⌘ North Little Rock Police Department
- ⌘ Federal standard (not an Arkansas implementation)
- ⌘ Implemented provided IEPD
- ⌘ Our development and testing is complete
- ⌘ FBI review complete
- ⌘ Arkansas ACIC is currently preparing their repository to accept our N-DEx export

Experience with N-DEx

ArrestDate	datetime	8	lexsdigest:EntityActivity/nc:Activity/nc:ActivityDate/nc:Date or nc:DateTime
ArrestTime	datetime	8	lexsdigest:EntityActivity/nc:Activity/nc:ActivityDate/nc:Date or nc:DateTime
ArrestType	nvarchar	100	ndexia:Arrest/j:ArrestCategoryCode Or j:ArrestCategoryText
MultipleSegments	nchar	1	ndexia:ArrestSubject/ndexia:ArrestSubjectAugmentation/j:ArrestSubjectCountCode
Age	nvarchar	4	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonAgeMeasure/nc:MeasurePointValue Or
Race	nvarchar	100	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonRaceCode
Sex	nvarchar	100	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonSexCode
Ethnicity	nvarchar	100	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonEthnicityCode
ResidentStatus	nvarchar	100	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonResidentCode
JuvenileDisposition	nvarchar	100	ndexia:ArrestSubject/ndexia:ArrestSubjectAugmentation/ndexia:ArresteeJuvenileDispositionCode
ProducedClearance	nchar	1	ndexia:ArrestSubject/ndexia:ArrestSubjectAugmentation/ndexia:ArresteeClearanceIndicator
ArrestArea	nvarchar	100	
FirstName	nvarchar	150	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonName/nc:PersonGivenName
FirstNameMetaphone	nvarchar	4	
MiddleName	nvarchar	150	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonName/nc:PersonMiddleName
MiddleNameMetaphone	nvarchar	4	
LastName	nvarchar	150	lexsdigest:EntityPerson/lexsdigest:Person/nc:PersonName/nc:PersonSurName
LastNameMetaphone	nvarchar	4	
Suffix	nvarchar	100	ndexia:Person/nc:PersonName/nc:PersonNameSuffixText
HomeAddress	nvarchar	255	lexsdigest:Associations/nc:ResidenceAssociation
HomeLandmark	nvarchar	255	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationStreet/nc:StreetFullText
HomeStreetNumber	nvarchar	50	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationStreet/nc:StreetNumberText
HomeFraction	nvarchar	25	
HomeDirectional	nvarchar	2	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationStreet/nc:StreetPredirectionalText
HomeStreet	nvarchar	255	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationStreet/nc:StreetName
HomeLocation	nvarchar	255	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:AddressSecondaryUnitText
HomeMailingAddress	nvarchar	255	
HomeCity	nvarchar	150	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationCityName
HomeState	nvarchar	2	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationStateName
HomeZipCode	nvarchar	9	lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationPostalCode
HomeLatitude	nvarchar	255	
HomeLongitude	nvarchar	255	
HomeAltitude	nvarchar	255	
HomePhoneNumber	nvarchar	10	lexsdigest:TelephoneNumberReference lexsdigest:TelephoneHomeIndicator
Occupation	nvarchar	150	lexsdigest:EntityTelephoneNumber/nc:FullTelephoneNumber/nc:TelephoneNumberFullID
Employer	nvarchar	255	lexsdigest:EntityPerson/lexsdigest:Person/j:PersonAugmentation/nc:EmployeeOccupationCategoryText
EmployerAddress	nvarchar	255	lexsdigest:Associations/nc:PersonEmploymentAssociation
			ndexia:Organization/nc:OrganizationDescriptionText
			lexsdigest:EntityLocation/nc:Location/nc:StructuredAddress/nc:LocationStreet/nc:StreetFullText

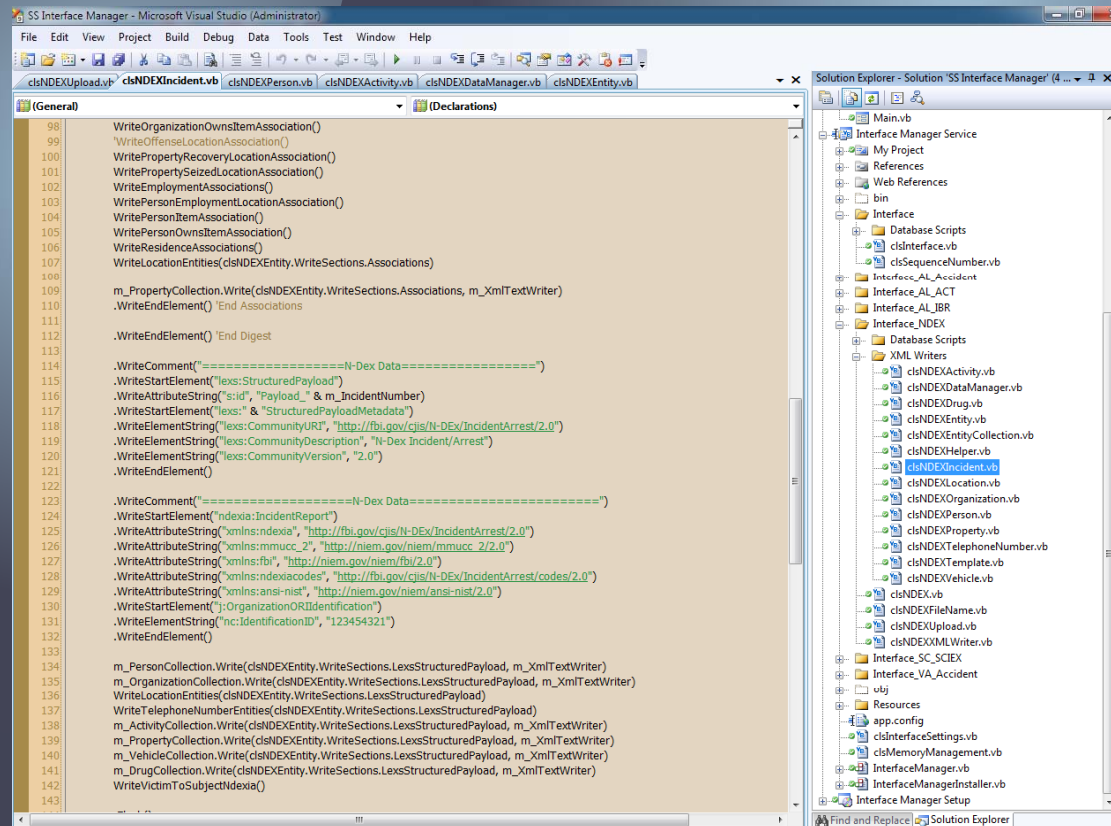
Experience with N-DEx

```
108 <lexs:Digest>
109 <!-------Persons----->
110 <lexsdigest:EntityPerson s:id="EArrest_111">
111 <lexsdigest:Person s:id="Arrest_111">
112 <nc:PersonAgeMeasure>
113 <nc:MeasurePointValue>31</nc:MeasurePointValue>
114 <nc:TimeUnitCode>ANN</nc:TimeUnitCode>
115 </nc:PersonAgeMeasure>
116 <nc:PersonAlternateName s:id="Arrest_111_Alias_1">
117 <nc:PersonSurName>Bubba</nc:PersonSurName>
118 <nc:PersonFullName>Bubba</nc:PersonFullName>
119 </nc:PersonAlternateName>
120 <nc:PersonBirthDate>
121 <nc:Date>1978-01-01</nc:Date>
122 </nc:PersonBirthDate>
123 <nc:PersonEyeColorCode>BLU</nc:PersonEyeColorCode>
124 <nc:PersonHairColorCode>BLN</nc:PersonHairColorCode>
125 <nc:PersonHeightMeasure>
126 <nc:MeasurePointValue>66</nc:MeasurePointValue>
127 <nc:LengthUnitCode>INH</nc:LengthUnitCode>
128 </nc:PersonHeightMeasure>
129 <nc:PersonName>
130 <nc:PersonGivenName>Thomas</nc:PersonGivenName>
131 <nc:PersonSurName>Smith</nc:PersonSurName>
132 <nc:PersonFullName>Thomas Smith</nc:PersonFullName>
133 </nc:PersonName>
134 <nc:PersonRaceCode>W</nc:PersonRaceCode>
135 <nc:PersonSexCode>F</nc:PersonSexCode>
136 <nc:PersonSSNIdentification>
137 <nc:IdentificationID>435345623</nc:IdentificationID>
138 </nc:PersonSSNIdentification>
139 <nc:PersonWeightMeasure>
140 <nc:MeasurePointValue>135</nc:MeasurePointValue>
141 <nc:WeightUnitCode>LBR</nc:WeightUnitCode>
142 </nc:PersonWeightMeasure>
143 <j:PersonAugmentation>
144 <nc:DriverLicense>
145 <nc:DriverLicenseIdentification>
```

eXtensible Markup Language file length: 87029 lines: 1573 Ln:1 Col:1 Sel:0 Dos\Windows ANSI INS

SS Interface Manager

- ⌘ REST, SOAP & WCF compliant
- ⌘ Modern .NET architecture
- ⌘ Mature platform



The screenshot displays the SS Interface Manager application within Microsoft Visual Studio. The main window shows the 'Declarations' section of the code, which includes various XML writing methods for different data types. The code is as follows:

```
98 WriteOrganizationOwnsItemAssociation()  
99 WriteOffenseLocationAssociation()  
100 WritePropertyRecoveryLocationAssociation()  
101 WritePropertySeizedLocationAssociation()  
102 WriteEmploymentAssociations()  
103 WritePersonEmploymentLocationAssociation()  
104 WritePersonItemAssociation()  
105 WritePersonOwnsItemAssociation()  
106 WriteResidenceAssociations()  
107 WriteLocationEntities(clsNDEXEntity, WriteSections.Associations)  
108  
109 m_PropertyCollection.Write(clsNDEXEntity, WriteSections.Associations, m_XmlTextWriter)  
110 .WriteEndElement() 'End Associations  
111  
112  
113 .WriteEndElement() 'End Digest  
114  
115 .WriteComment("=====N-Dex Data=====")  
116 .WriteStartElement("lexs:StructuredPayload")  
117 .WriteAttributeString("s:id", "Payload_" & m_IncidentNumber)  
118 .WriteAttributeString("lexs:" & "StructuredPayloadMetadata")  
119 .WriteElementString("lexs:CommunityURI", "http://fbi.gov/cjis/N-Dex/IncidentArrest/2.0")  
120 .WriteElementString("lexs:CommunityDescription", "N-Dex Incident/Arrest")  
121 .WriteElementString("lexs:CommunityVersion", "2.0")  
122 .WriteEndElement()  
123  
124 .WriteComment("=====N-Dex Data=====")  
125 .WriteStartElement("ndexia:IncidentReport")  
126 .WriteAttributeString("xmlns:ndexia", "http://fbi.gov/cjis/N-Dex/IncidentArrest/2.0")  
127 .WriteAttributeString("xmlns:mmucc", "http://niem.gov/niem/mmucc/2.0")  
128 .WriteAttributeString("xmlns:fb", "http://niem.gov/niem/fbi/2.0")  
129 .WriteAttributeString("xmlns:ndexiacodes", "http://fbi.gov/cjis/N-Dex/IncidentArrest/codes/2.0")  
130 .WriteAttributeString("xmlns:ans-nist", "http://niem.gov/niem/ans-nist/2.0")  
131 .WriteStartElement("OrganizationORIdentification")  
132 .WriteElementString("nc:IdentificationID", "123454321")  
133 .WriteEndElement()  
134  
135 m_PersonCollection.Write(clsNDEXEntity, WriteSections.LexsStructuredPayload, m_XmlTextWriter)  
136 m_OrganizationCollection.Write(clsNDEXEntity, WriteSections.LexsStructuredPayload, m_XmlTextWriter)  
137 WriteLocationEntities(clsNDEXEntity, WriteSections.LexsStructuredPayload)  
138 WriteTelephoneNumbersEntities(clsNDEXEntity, WriteSections.LexsStructuredPayload)  
139 m_ActivityCollection.Write(clsNDEXEntity, WriteSections.LexsStructuredPayload, m_XmlTextWriter)  
140 m_PropertyCollection.Write(clsNDEXEntity, WriteSections.LexsStructuredPayload, m_XmlTextWriter)  
141 m_VehicleCollection.Write(clsNDEXEntity, WriteSections.LexsStructuredPayload, m_XmlTextWriter)  
142 m_DrugCollection.Write(clsNDEXEntity, WriteSections.LexsStructuredPayload, m_XmlTextWriter)  
143 WriteVictimToSubjectNdexia()
```

The Solution Explorer on the right shows the project structure, including folders for 'Interface Manager Service', 'My Project', 'References', 'Web References', 'bin', 'Interface', 'Database Scripts', 'XML Writers', and 'Resources'. The 'Interface' folder contains several files, including 'clsInterface.vb', 'clsSequenceNumber.vb', and various 'Interface_At_...' files. The 'XML Writers' folder contains files like 'clsNDEXActivity.vb', 'clsNDEXDataManager.vb', 'clsNDEXDrug.vb', 'clsNDEXEntity.vb', 'clsNDEXEntityCollection.vb', 'clsNDEXHelper.vb', 'clsNDEXIncident.vb', 'clsNDEXLocation.vb', 'clsNDEXOrganization.vb', 'clsNDEXPerson.vb', 'clsNDEXProperty.vb', 'clsNDEXTelephoneNumber.vb', 'clsNDEXTemplate.vb', 'clsNDEXVehicle.vb', 'clsNDEX.vb', 'clsNDEXFileName.vb', 'clsNDEXUpload.vb', and 'clsNDEXXMLWriter.vb'. The 'Resources' folder contains 'app.config', 'clsInterfaceSettings.vb', 'clsMemoryManagement.vb', 'InterfaceManager.vb', 'InterfaceManagerInstaller.vb', and 'InterfaceManagerSetup.vb'.

Recommendations

- ⌘ Should you adopt a 3rd party integrator, any extraction software should not modify vendor schemas (triggers, tables, etc)
- ⌘ We recommend not using client certificates, however should any X.509 client certificates be used, they should have a long shelf life so each exporting agency does not halt reporting
- ⌘ A dedicated testing web service is essential *before* releasing the specification to vendors

Conclusion

- ⌘ Historically we've lost money on information sharing exports because we've tried so hard to keep costs reasonable. We will continue to keep any costs reasonable as we understand the imperative nature of your mission.
- ⌘ We look forward to the power of information the agencies of North Carolina will receive from our combined efforts.
- ⌘ As you've seen, Southern Software has hands on experience with several information sharing initiatives. You have our support whether you adopt an existing standard such as GJXDM, N-DEx or you choose to go another direction.