The Evolution of CIECA Standards

EMS → BMS → CAPIS

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Introduction

- CIECA Standards have evolved through the years to meet the changing needs of the industry.
- Since the inception of the EMS in 1994, technology has evolved at a break-neck pace and CIECA had to adapt along with it to be relevant and useful.
- We are actively working on Gen-3 of CIECA Standards known as the CIECA API Standards or CAPIS.
- The purpose of this presentation is to educate the industry on:
  - The differences in the standards
  - How they are used
  - Impacts to the users

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What is a CIECA Standard

A CIECA Standard is a common 'vocabulary' used by software developers to create API's to exchange information.

A Standard consists of five key components

Data Dictionary

- Defines the data elements included in the standard
- Defines data type (currency, text, number, etc.); field size, etc.

Code Lists

- Defines all the variables used to define drop down lists, radio button lists, etc.

Schemas

- A blueprint that defines how the data elements are organized and validated.

Test Instances

- Test files that allow users to verify API's while in development

Implementation Guides

- Documentation to help software developers apply the standard to real-world applications.

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The Birth of a Standard

An Idea is Born

An idea becomes a product or service. Often a single person or company creates the first solution.

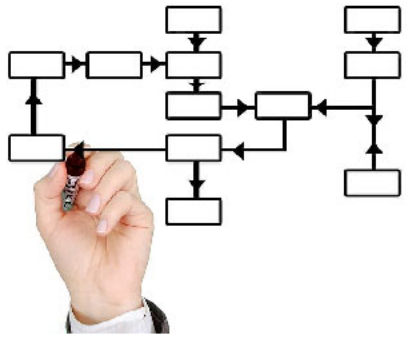
Initially integrations are not an option. Users have to work in the vendors platform.

Competitors Join the Industry

Competitors soon enter the race. Each company takes a different approach and creates a unique solution.

Early efforts to integrate begin to grow. Integration methods are proprietary and often customized.

Customers Want Integrations



Customers want to optimize processes with integrations and data feeds.

Proprietary solutions grow as customers strive to improve processes and workflows.

Chaos Ensues

What start as good intentions, soon turn to chaos, as players in the industry struggle to keep up with growing list of propietary solutions.

The industry realizes a standard is necessary.

A Standard is Born

Parties to the industry gather to develop a common language that all can use to integrate with trading partners.

The Standard is more efficient and provides a cost effective means of streamlining processes.

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Data Integration Standards

The Evolution of CIECA Standards

Estimate Management System

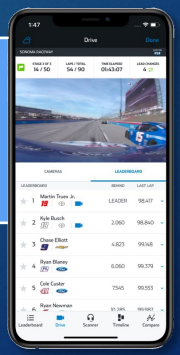
- 1994 – dBase Data File
  - Originally developed to export an estimate record from an estimating system into a shop management system

Business Message Suite

- 2006 – XML
  - A suite of 'messages' designed to support every major process across the entire collision ecosystem

CIECA API Standards

- 2022 - JSON
  - The next generation of CIECA Standards using JSON and the OpenAPI framework



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Understanding CIECA Standards

TO BEST UNDERSTAND WHERE CAPIS IS GOING… LET'S START BY LOOKING AT OUR CURRENT STANDARDS.

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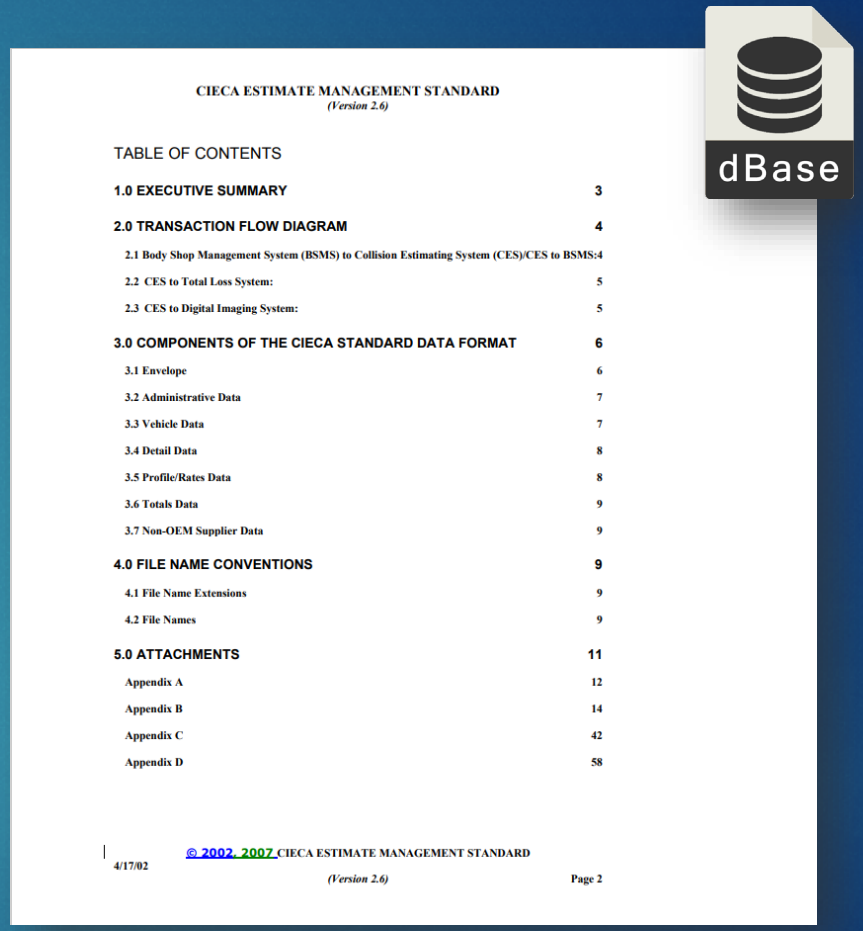
EMS

ESTIMATE MANAGEMENT STANDARD

EMS (Estimate Management Standard)

Year	1994
Language	dBase
Use Cases	1
Data Dictionary	59 Pages
Code Lists	19
Schemas	1
Implementation Guide	0
Test Instances	0

- The EMS was simple.
- It had a small data dictionary and simple code lists to support a single use case/schema.
- Everything was contained in one document



CIECA ESTIMATE MANAGEMENT STANDARD
(Version 2.6)

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 3

2.0 TRANSACTION FLOW DIAGRAM 4

2.1 Body Shop Management System (BSMS) to Collision Estimating System (CES)/CES to BSMS:4

2.2 CES to Total Loss System: 5

2.3 CES to Digital Imaging System: 5

3.0 COMPONENTS OF THE CIECA STANDARD DATA FORMAT 6

3.1 Envelope 6

3.2 Administrative Data 7

3.3 Vehicle Data 7

3.4 Detail Data 8

3.5 Profile/Rates Data 8

3.6 Totals Data 9

3.7 Non-OEM Supplier Data 9

4.0 FILE NAME CONVENTIONS 9

4.1 File Name Extensions 9

4.2 File Names 9

5.0 ATTACHMENTS 11

Appendix A 12

Appendix B 14

Appendix C 42

Appendix D 58

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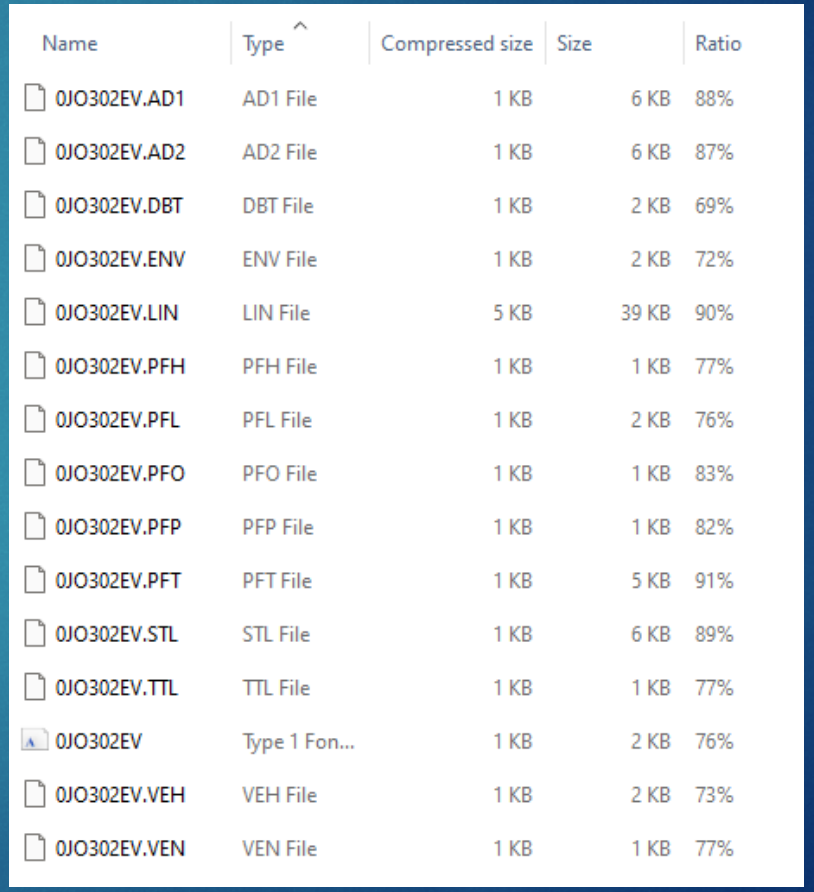
EMS Output

- The EMS consists of 16 sub-files
- Each subfile contains a part of the estimate.
- To transmit the EMS it is zipped and sent as an attachment.
- The file must be unzipped and then the data extracted from the subfiles



Name	Type	Compressed size	Size	Ratio
0JO302EV.AD1	AD1 File	1 KB	6 KB	88%
0JO302EV.AD2	AD2 File	1 KB	6 KB	87%
0JO302EV.DBT	DBT File	1 KB	2 KB	69%
0JO302EV.ENV	ENV File	1 KB	2 KB	72%
0JO302EV.LIN	LIN File	5 KB	39 KB	90%
0JO302EV.PFH	PFH File	1 KB	1 KB	77%
0JO302EV.PFL	PFL File	1 KB	2 KB	76%
0JO302EV.PFO	PFO File	1 KB	1 KB	83%
0JO302EV.PFP	PFP File	1 KB	1 KB	82%
0JO302EV.PFT	PFT File	1 KB	5 KB	91%
0JO302EV.STL	STL File	1 KB	6 KB	89%
0JO302EV.TTL	TTL File	1 KB	1 KB	77%
0JO302EV	Type 1 Fon...	1 KB	2 KB	76%
0JO302EV.VEH	VEH File	1 KB	2 KB	73%
0JO302EV.VEN	VEN File	1 KB	1 KB	77%

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EMS Output

- The EMS consists of 16 sub-files
- Each subfile contains a part of the estimate.
- To transmit the EMS it is zipped and sent as an attachment.
- The file must be unzipped and then the data extracted from the subfiles
- Example: .veh file

IMPACT_1	12
IMPACT_2	11
DMG_MEMO	
DB_V_CODE	ARM8450
PLATE_NO	[redacted]
PLATE_ST	MS
V_VIN	2T3ZF31V49[redacted]
V_COND	EX
V_PROD_DT	0409
V_MODEL_YR	09
V_MAKECODE	TOYO
V_MAKEDESC	
V_MODEL	RAV4 4X2 LIMITED
V_TYPE	UV
V_BSTYLE	4D UTV
V_TRIMCODE	
TRIM_COLOR	
V_MLDGCODE	
V_ENGINE	4-2.5L-FI
V_MILEAGE	2449
V_OPTIONS	
V_COLOR	SILVER
V_TONE	1
V_STAGE	2
PAINT_CD1	
PAINT_CD2	
PAINT_CD3	
V_MEMO	

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Advantages of the EMS

- Easy to work with
- Contains the information necessary for many workflows
- All 3 estimating system support EMS file creation at no cost to the shop
- There are no restrictions on the export of EMS files
- Shops can export an EMS file:
  - when they want
  - share it with anyone they want

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Challenges of the EMS

- Aging technology
- Supports only 1 use case:
  - Estimating System → Shop Management System
- Never designed to support workflows that were external to the body shop
- An EMS file may contain PII that a vendor doesn't need
  - Data Privacy was not a major consideration in 1994
- Many vendors have developed 'data pumps' that export EMS files, potentially without the shop's awareness

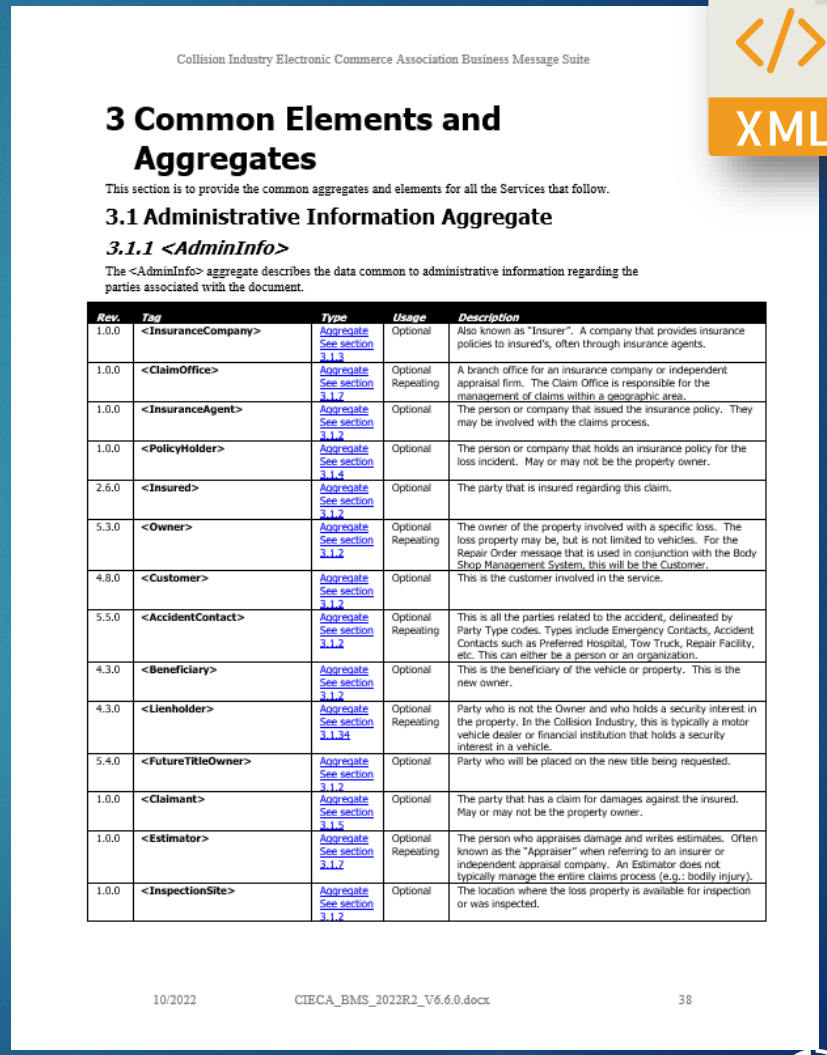
BMS

BUSINESS MESSAGING SUITE

BMS (Business Messaging Suite)

Year	2006
Language	XML
Use Cases	16
Data Dictionary	322 Pages
Code Lists	190
Schemas	51
Implementation Guide	4,292 pages
Test Instances	428

- The BMS is comprehensive. It supports all major industry workflows
- The BMS is hierarchical, with data grouped into 'aggregates' of common data which are used across schemas
- Implementation guides and test instances are tailored to use cases.



3 Common Elements and Aggregates

This section is to provide the common aggregates and elements for all the Services that follow.

3.1 Administrative Information Aggregate

3.1.1 <AdminInfo>

The <AdminInfo> aggregate describes the data common to administrative information regarding the parties associated with the document.

Rev.	Tag	Type	Usage	Description
1.0.0	**<InsuranceCompany>**	Aggregate See section 3.1.3	Optional	Also known as "Insurer". A company that provides insurance policies to insured's, often through insurance agents.
1.0.0	**<ClaimOffice>**	Aggregate See section 3.1.7	Optional Repeating	A branch office for an insurance company or independent appraisal firm. The Claim Office is responsible for the management of claims within a geographic area.
1.0.0	**<InsuranceAgent>**	Aggregate See section 3.1.2	Optional	The person or company that issued the insurance policy. They may be involved with the claims process.
1.0.0	**<PolicyHolder>**	Aggregate See section 3.1.4	Optional	The person or company that holds an insurance policy for the loss incident. May or may not be the property owner.
2.6.0	**<Insured>**	Aggregate See section 3.1.2	Optional	The party that is insured regarding this claim.
5.3.0	**<Owner>**	Aggregate See section 3.1.2	Optional Repeating	The owner of the property involved with a specific loss. The loss property may be, but is not limited to vehicles. For the Repair Order message that is used in conjunction with the Body Shop Management System, this will be the Customer.
4.8.0	**<Customer>**	Aggregate See section 3.1.2	Optional	This is the customer involved in the service.
5.5.0	**<AccidentContact>**	Aggregate See section 3.1.2	Optional Repeating	This is all the parties related to the accident, delineated by Party Type codes. Types include Emergency Contacts, Accident Contacts such as Preferred Hospital, Tow Truck, Repair Facility, etc. This can either be a person or an organization.
4.3.0	**<Beneficiary>**	Aggregate See section 3.1.2	Optional	This is the beneficiary of the vehicle or property. This is the new owner.
4.3.0	**<Lienholder>**	Aggregate See section 3.1.34	Optional Repeating	Party who is not the Owner and who holds a security interest in the property. In the Collision Industry, this is typically a motor vehicle dealer or financial institution that holds a security interest in a vehicle.
5.4.0	**<FutureTitleOwner>**	Aggregate See section 3.1.2	Optional	Party who will be placed on the new title being requested.
1.0.0	**<Claimant>**	Aggregate See section 3.1.5	Optional	The party that has a claim for damages against the insured. May or may not be the property owner.
1.0.0	**<Estimator>**	Aggregate See section 3.1.7	Optional Repeating	The person who appraises damage and writes estimates. Often known as the "Appraiser" when referring to an insurer or independent appraisal company. An Estimator does not typically manage the entire claims process (e.g.: bodily injury).
1.0.0	**<InspectionSite>**	Aggregate See section 3.1.2	Optional	The location where the loss property is available for inspection or was inspected.

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BMS Output

- The BMS generates an XML file defined by the specific use case & schema
- Each file contains all the information necessary to complete the transaction
- The recipient extracts the data necessary to support their process

AssignmentAddRq.xml
CIECA Releases › ··· › valid

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Sample XML file generated by XMLSpy v2007 (http://www.altova.com)-->
<AssignmentAddRq xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.cieca.com/BMS">
	<!--RqUID:  Here is our unique identifier for the Glass Statement Information Add Request message.-->
	<RqUID>04075085-1104-9025-1DB8-D1F331875811</RqUID>
	<DocumentInfo>
		<BMSVer>2.9.1</BMSVer>
		<DocumentType>GA</DocumentType>
		<DocumentID>Assignment-3243-1</DocumentID>
		<!--Document Version Code:  This is the original Statement-->
		<DocumentVerCode>EM</DocumentVerCode>
		<DocumentVerNum>00</DocumentVerNum>
		<DocumentStatus>I</DocumentStatus>
		<CreateDateTime>2007-04-17T00:00:00+00:15</CreateDateTime>
		<TransmitDateTime>2007-04-17T00:00:00+00:15</TransmitDateTime>
		<ReferenceInfo>
			<RepairOrderID>01-00909</RepairOrderID>
		</ReferenceInfo>
		<CountryCode>US</CountryCode>
	</DocumentInfo>
	<EventInfo>
		<AssignmentEvent>
			<CreateDateTime>2007-04-17T09:30:47.0Z</CreateDateTime>
			<SendDateTime>2007-04-17T09:30:47.0Z</SendDateTime>
			<ReceiveDateTime>2007-04-17T09:30:47.0Z</ReceiveDateTime>
			<InitialContactDateTime>2007-04-17T09:30:47.0Z</InitialContactDateTime>
			<AppointmentDateTime>2007-04-17T09:30:47.0Z</AppointmentDateTime>
		</AssignmentEvent>
	</EventInfo>
	<AdminInfo>
		<InsuranceCompany>
			<Party>
				<OrgInfo>
					<CompanyName>Auto Insurers Inc</CompanyName>
					<Communications>
						<CommQualifier>WP</CommQualifier>
						<CommPhone>+1-773-8369928+122</CommPhone>
						<PreferredInd>true</PreferredInd>
					</Communications>
				</OrgInfo>
				<ContactInfo>
					<ContactJobTitle>Adjustor</ContactJobTitle>
```

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Advantages of the BMS

- Designed to include only the information necessary to support the use case
- A BMS message contains all the data necessary to complete a transaction
- Works well for ‘enterprise’ level integrations (server to server)

Challenges of the BMS

- The BMS is big and is perceived by many to be complex.
- Hierarchy and the extensive use of aggregates can result in a lot of data being nested multiple levels deep in the schema.
  - The use of aggregates and a nested hierarchy of data is a valid technique; however, it can be unwieldy to work with.
- Large BMS messages don't lend themselves well for mobile devices and process

This schema is approx. 300 lines long

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CAPIS

CIECA API STANDARD

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CAPIS (CIECA API Standard)

Year	2022
Language	JSON
Use Cases	At least 16
Data Dictionary	Consolidate
Code Lists	Consolidate
Schemas	TBD
Implementation Guide	TBD
Test Instances	TBD

- The CAPIS standards will be delivered via the website as opposed to a paper format document
- All data elements will be consolidated into one alpha sorted dictionary.

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Important Changes

- Consolidated Data Dictionary
  - In the BMS, elements of the data dictionary may be repeated in various parts of the document.
  - In CAPIS, there will be one dictionary and each data element will be in one place only.
    - This will improve maintenance and accuracy
- Flatten the Schema
  - Where the BMS relies on hierarchy and nesting of data elements, in CAPIS much of the hierarchy will be eliminated and the schema simplified.

Flatten the Schema

BMS (XML)

```
<Owner>
  <Party>
    <PersonInfo>
      <PersonName>
        <NamePrefix>Mrs</NamePrefix>
        <FirstName>Sharon</FirstName>
        <MiddleName>M</MiddleName>
        <LastName>Jackson</LastName>
      </PersonName>
      <Communications>
        <CommQualifier>HP</CommQualifier>
        <CommPhone>512-2455621</CommPhone>
        <PreferredInd>1</PreferredInd>
      </Communications>
      <Communications>
        <CommQualifier>WP</CommQualifier>
        <CommPhone>512-5648792</CommPhone>
        <PreferredInd>1</PreferredInd>
      </Communications>
      <BirthDate>1963-09-16</BirthDate>
    </PersonInfo>
    <Memo>Additional info if necessary</Memo>
  </Party>
</Owner>
```

CAPIS (JSON)

```
"owner": {
  "namePrefix": "Mrs"
  "firstName": "Sharon",
  "middleName": "M"
  "lastName": "Jackson"
  "birthDate": "1963-09-16"
},
"phoneNums": [
  {
    "type": "HP"
    "phoneNum": "+5122455621",
  }
  ],
  {
    "type": "WP"
    "phoneNum": "+5125648792",
  }
]
```

JSON communicates the same information more simply

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CAPIS Benefits

- JSON is a widely used technology that facilitates ‘micro services’ (smaller messages that only contain the data necessary for a transaction)
- Limits the data to only what is needed to perform the service
- Simplifies the structure of the data

BMS or CAPIS?

WHICH IS THE BEST STANDARD FOR THE JOB?

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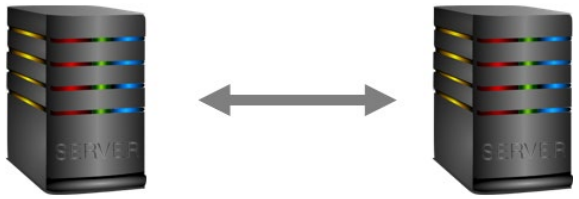
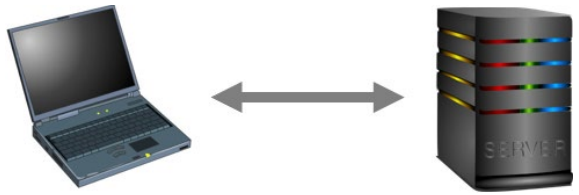
Integration Methods



Enterprise

Fully Automated

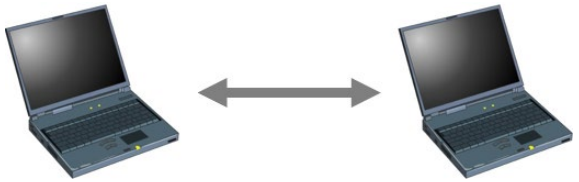
- Server to Server
- Standing integrations between companies
- Often BMS / XML



Hybrid

Upload / Download

- Desktop to Server
- Data pump or manual upload / download
- Generally, EMS



Ad Hoc

Email / Other

- Desktop to Desktop
- Email
- Generally, EMS

Transaction Volume

The BMS drives millions of transactions each year, but some users have other needs.

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XML vs JSON

	XML	JSON
Document Size	Document size is bulky and with big files, the tag structure can make it large and hard to read.	Compact and easy to read, no redundant or empty tags or data, making the file look simple.
Speed	Bulky and slow in parsing, leading to slower data transmission	Very fast as the size of file is considerably smaller, faster parsing by the JavaScript engine and hence faster transfer of data
Array Support	Doesn't directly support arrays. To be able to use an array, one has to add tags for each item.	Supports array

Many users find JSON easier to work with.

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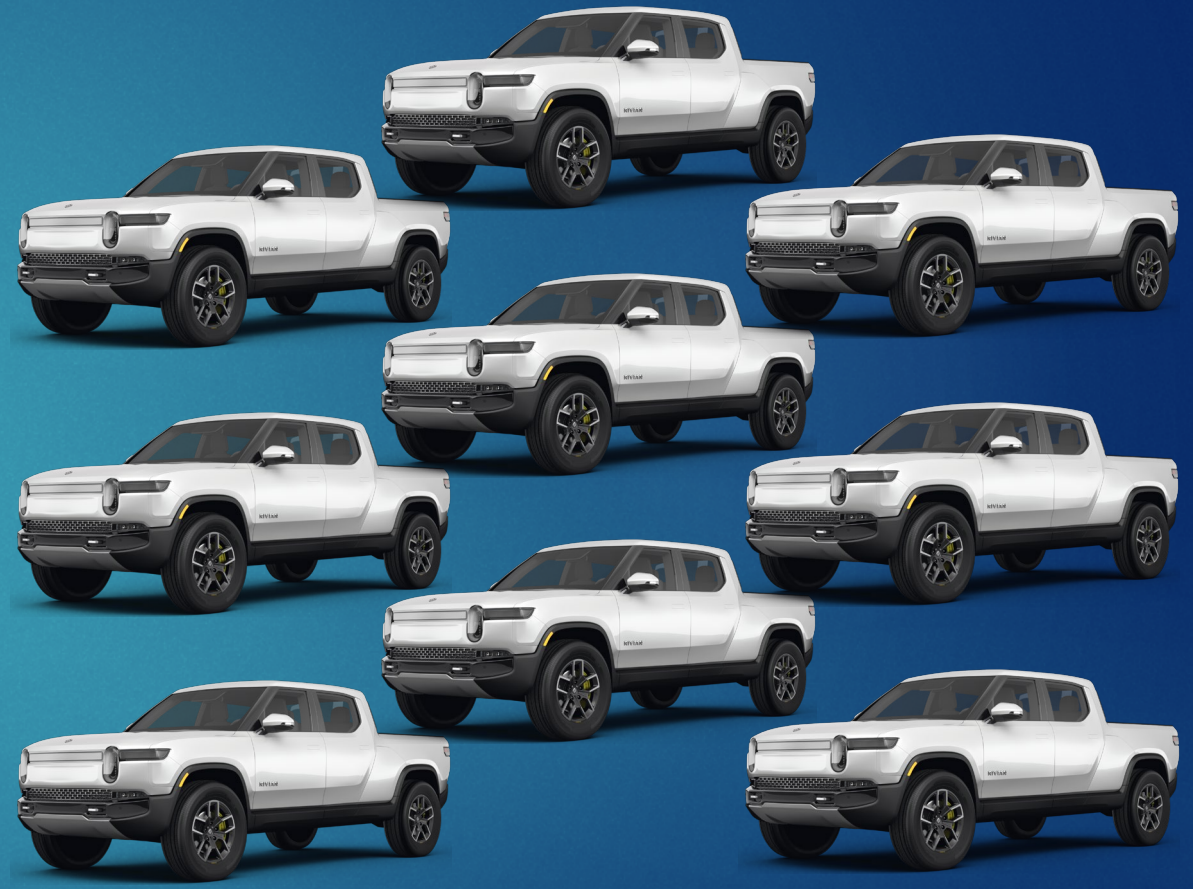
BMS

CAPIS



One BIG payload… vs… a bunch of smaller ones

Single Batch process… vs… Transactional processes

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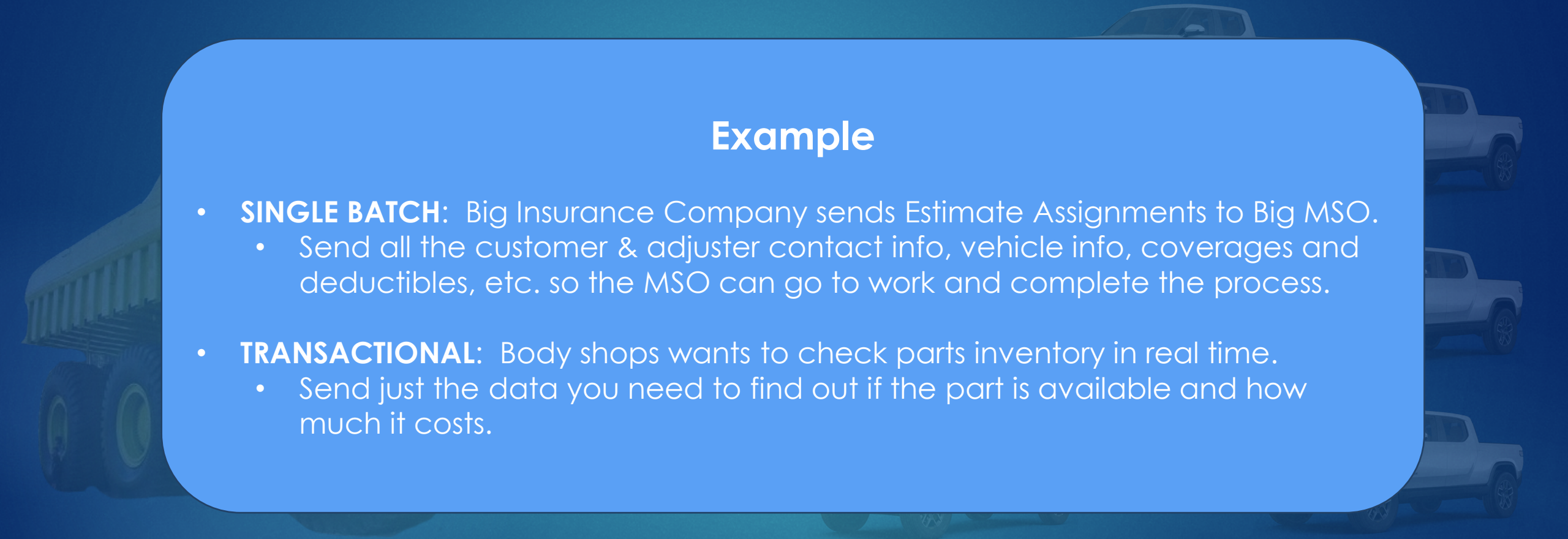
BMS (XML)

CAPIS (JSON)



Example

- **SINGLE BATCH**: Big Insurance Company sends Estimate Assignments to Big MSO.
  - Send all the customer & adjuster contact info, vehicle info, coverages and deductibles, etc. so the MSO can go to work and complete the process.

- **TRANSACTIONAL**: Body shops wants to check parts inventory in real time.
  - Send just the data you need to find out if the part is available and how much it costs.

Which technology meets your needs?

Option to choose the right tool for the job!

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BMS or CAPIS?

- It's not an 'either / or' scenario
- CAPIS is not intended to eliminate the BMS
- Companies building new integrations may choose to use CAPIS going forward while maintaining BMS integrations already in production
- There is no need or intention to push companies to use CAPIS over BMS…
  - It's members choice
  - Which is the right tool for them and their trading partner

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Next Steps

- The Architecture Committee is actively working to develop the first generation of CAPIS standards.
  - You'll hear more about these efforts tomorrow.
- All XML messages will be developed in CAPIS.
  - How they are structured will be different, but the processes will be supported
- Architecture will work with other committees as appropriate to assist in the development of the CAPIS standards

Questions?

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