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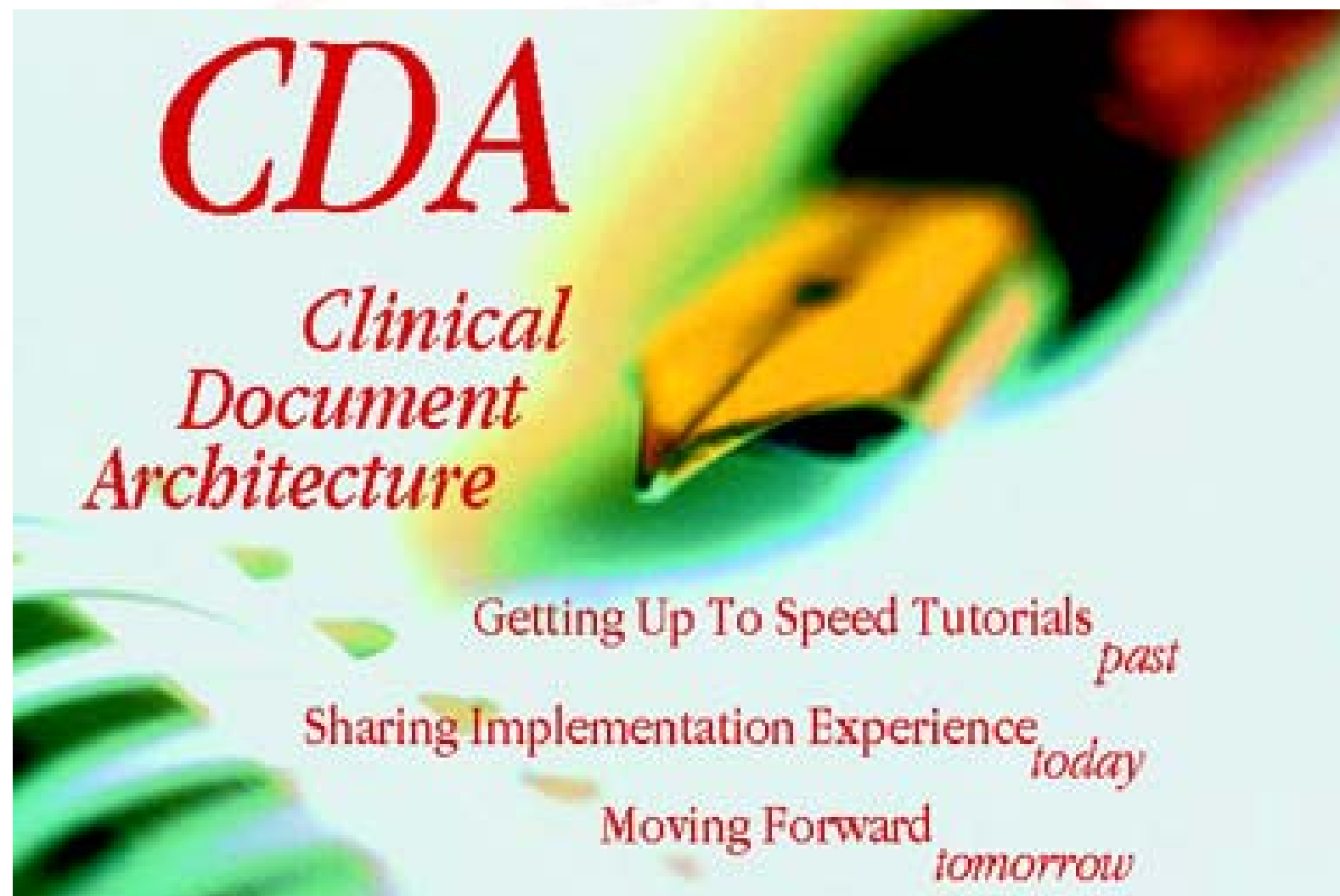
Introducción al CDA

Clinical Document Architecture

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Estándar basado en XML



- Press Release 2000-10-04

Health Level Seven, Inc.
PRESS RELEASE

Contact: Karen Van Hentenryck (734) 677-7777



For Immediate Release

ANSI/HL7 CDA R1.0-2000

Ann Arbor, Mich.—October 4, 2000—Health Level Seven, Inc. (HL7) successfully balloted what it believes to be the first XML-based standard for healthcare—the Clinical Document Architecture (CDA). The CDA, which was until recently known as the Patient Record Architecture (PRA), provides an exchange model for clinical documents (such as discharge summaries and progress notes)—and brings the healthcare industry closer to the realization of an electronic medical record. The CDA Standard is expected to be published as an ANSI approved standard by the end of the year.

Qué es CDA



- Clinical Document Architecture
 - Primera versión KONA group en 1997
 - Conocido previamente como: Patient Record Architecture (PRA)
- CDA es
 - Un **estándar de marcaje** para definir la estructura y la semántica de un **documento clínico** que se requiere intercambiar entre distintos sistemas.



Ejemplo

- <clinical_documento

```
<clinical_documento_heade
  <id EX="a123" RT="2.16
  <document_type_cd V="1
    DN="Consultation not
  <origination_dttm V="2
  <document_relationship
    <document_relationsh
    <related_document>
      <id EX="a234" RT="
    </related_document>
  </document_relationshi
  <patient_encounter>
    <id EX="KPENC1332" R
    <encounter_tmr V="20
  </patient_encounter>
  <local_header ignore="
    ... extra stuff that
  </local_header>
</clinical_documento_head
...
```

jvilalta@vico.org

Seminario Técnico

Good Health Clinic Consultation note

Consultant: Robert Dolin, MD
Date: April 7, 2000
Patient: Henry Levin, the 7th **MRN:** 12345 **Sex:** M
Birthdate: September 24, 1932

History of Present Illness

Henry Levin, the 7th is a 67 year old male referred for further asthma management. Onset of asthma in his teens. He was hospitalized twice last year, and already twice this year. He has not been able to stop using steroids for the past several months.

Past Medical History

- Asthma
- Hypertension
- Osteoarthritis, right knee

Medications

- Theodur 200mg BID
- Proventil inhaler 2puffs QID PRN
- Prednisone 20mg qd
- HCTZ 25mg qd

Allergies

- Penicillin - Hives
- Aspirin - Wheezing

Social History

- Smoking :: 1 PPD between the ages of 20 and 55, and then he quit.
- Alcohol :: rare

Physical Examination

- **Vital Signs** :: BP 118/78; Resp 16 and unlabored; T 98.6F; HR 86 and regular

Header

Body

Qué es CDA



- Es un **objeto de información**
 - Que puede existir fuera de un mensaje
 - Puede contener textos, imágenes y contenido multimedia
 - Puede ser leído e interpretado por personas y sistemas



Qué es CDA

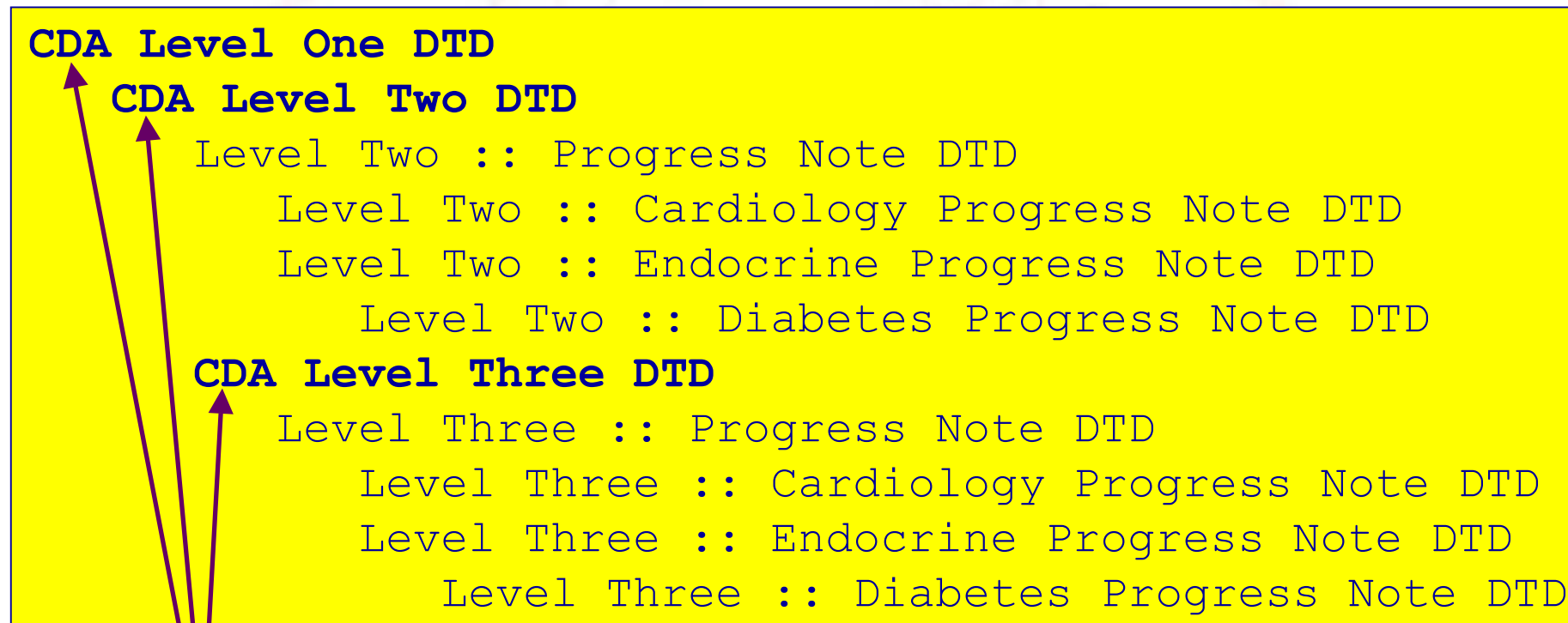


- XML and documents
 - Semantic markup
 - Two extremes in nowadays data processing
 - „Narrative text“ vs. „Fields in a database“
 - „enrich“ text with markups – for various purposes

Weitere Informationen über den Patienten, z. B.: Eß- und Trinkverh., Schwerhörigk., Schlafst., Körperhyg., Raucher etc.	
	F. A. P.
en <input type="checkbox"/> bewusstlos	E. A. Diabetes mellitus seit ca. 15 Jahren (diab. insipidus) seit Kindheit Neph- rose (L. Niere), 2mal insoperiert deshalb vor 23 Jahren TEP L. Niere 2. Resektion vor 5 Jahren L. B. Prostata in der L. Niere stark vergr.
0-0	
1-0-0	
1-0-0	

Aufnahmeanamnese			
		seit	ICD
Frühere Diagnosen	TBC li. Hüftgelenk	Kindheit	A18.0
	Diabetes mellitus	23 J.	E10.9
	Myocardinfarkt	4,5 J.	I21.3
		am	ICPM
Frühere Operationen	Hüft-TEP	1976	5-820-
	Schilddrüsenresektion	1994	5-062-
Dauermedikation	Atrotec Forte	1-0-1	
	Pericor Forte	1-0-1	

Arquitectura



CDA "Levels" - Quantum sets of specializations, to which further constraints can be applied.

Arquitectura



- **Level One**
 - RIM-derived **document header**
 - **body** is largely structural, although codes can be inserted
- **Level Two**
 - HL7 Templates can constrain the general Level One DTD, resulting in Level Two DTD
- **Level Three**
 - Clinical content can be marked up to the extent that it is modeled in the RIM

“Specialization to Clinical Markup”

Claves del CDA



- CDA documents are encoded in **eXtensible Markup Language** (XML).
- CDA documents derive their meaning from the **HL7 Reference Information Model** (RIM) and use **HL7 V3 data types**.
- The complete CDA will include a **hierarchical set of document specifications**.
This hierarchy is referred to as an architecture.
- CDA documents are no messages but can be the **payload** of an v2 or v3 message

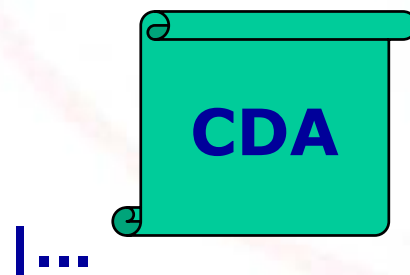
CDA y mensajes HL7



- **Relationship of CDA to HL7 Messaging Standards**
 - **CDA documents are encapsulated as MIME packages within HL7 messages**

HL7 V2.x

MSH|...
EVN|...
PID|...
PV1|...
TXA|...
OBX|1|ED|...



HL7 V3

```
<service_cd>  
<service_txt T="ED">  
CDA  
</service_txt>  
</service_cd>
```

Estructura CDA



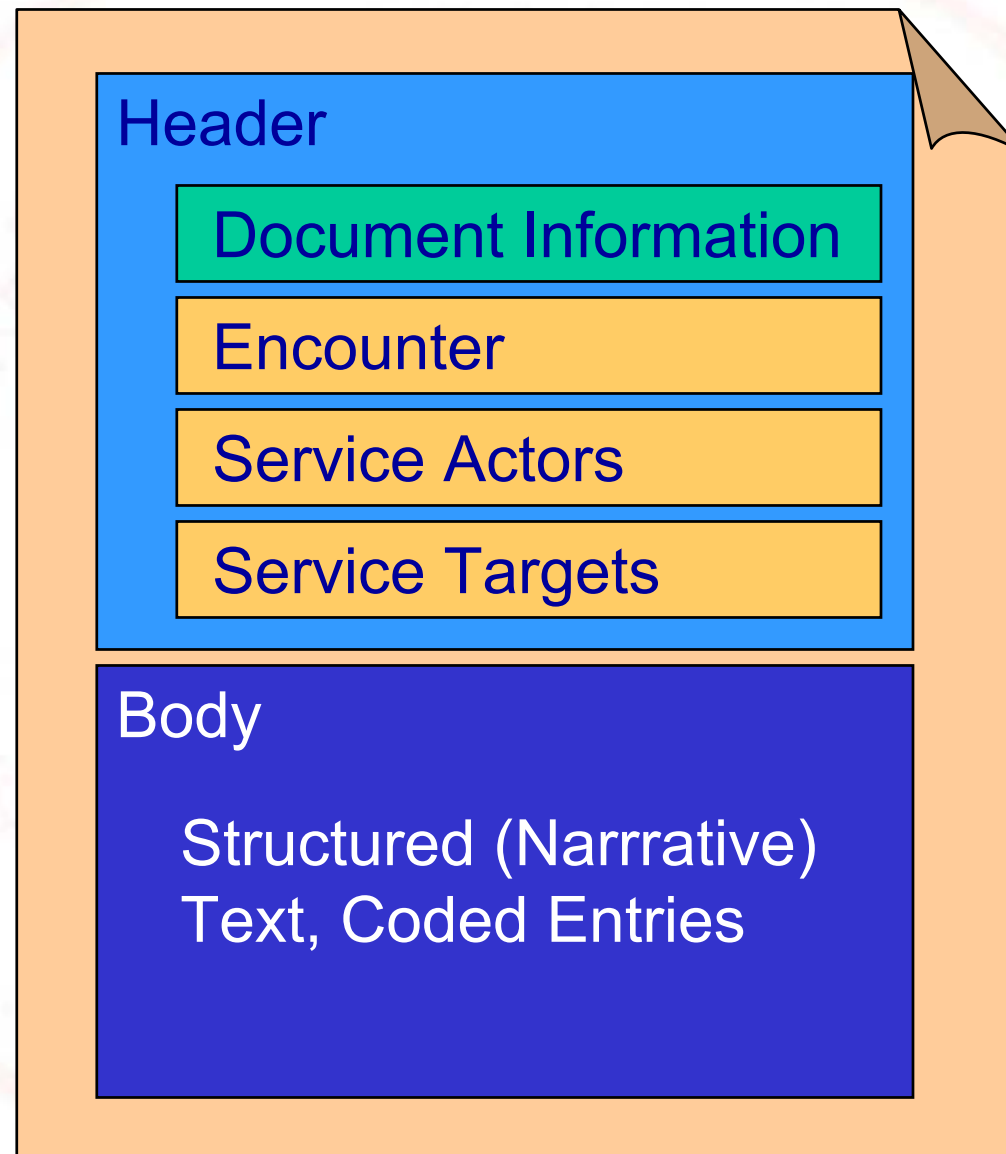
- **CDA Header**
 - Specified in the CDA Header DTD
 - derived using the V3 Message Development process
- **CDA Level One Body**
 - Specified in the CDA Level One DTD
 - derived from document analysis, building on the modeling employed by document markup standards.
- **HL7 V3 Data Types**
 - An XML implementation of the abstract data type specification used by both the CDA and the HL7 Version 3 message specifications.

Elementos de la cabecera

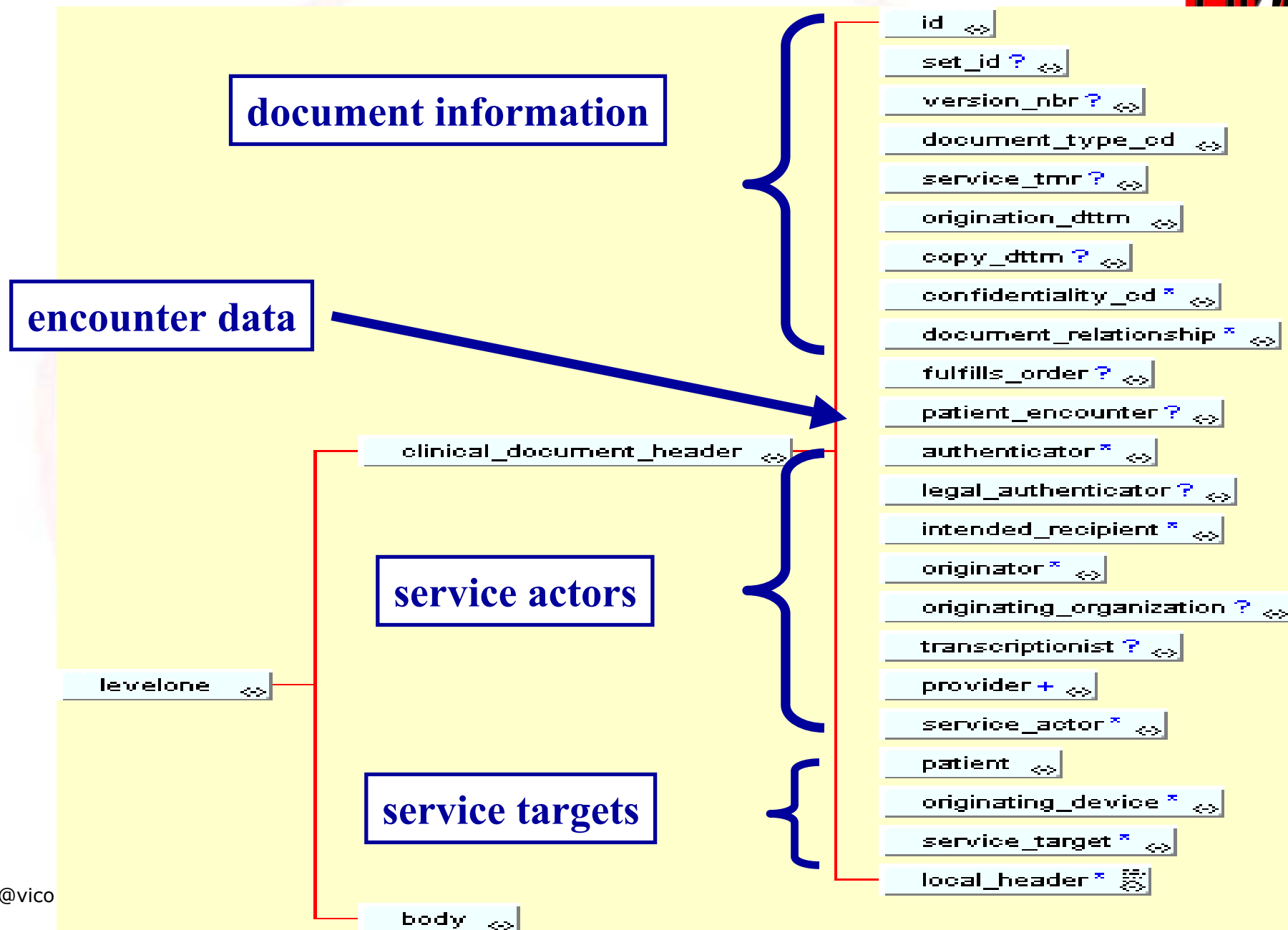


- **Specified by the CDA Header DTD**
 - derived from a Hierarchical Description (HD)
 - method closely parallels the V3 Message Development Framework
- **Four logical components of the CDA Header**
 - 1. Document information
 - 2. Encounter data
 - 3. Service actors (such as providers)
 - 4. Service targets (such as patients)

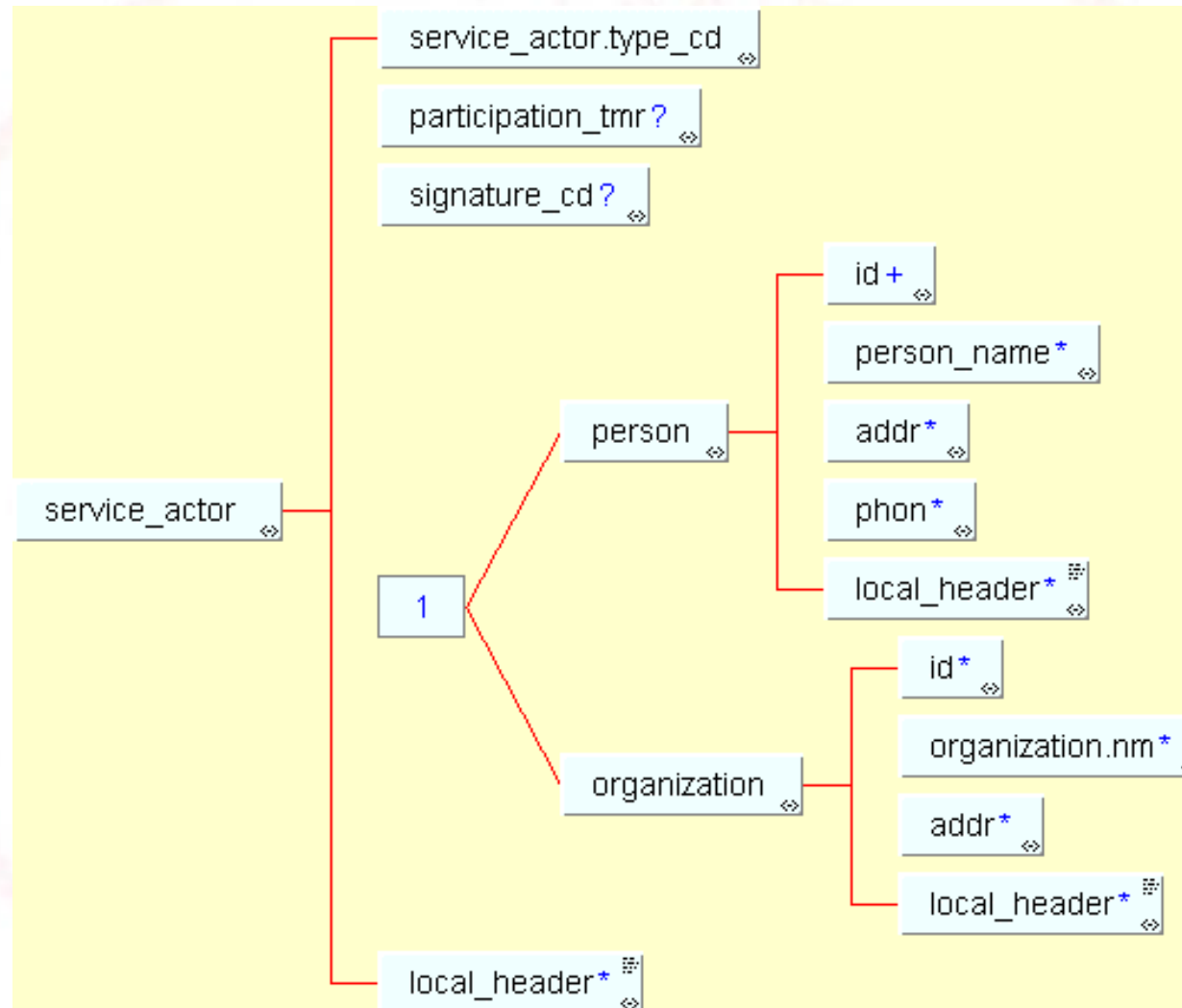
Documento CDA



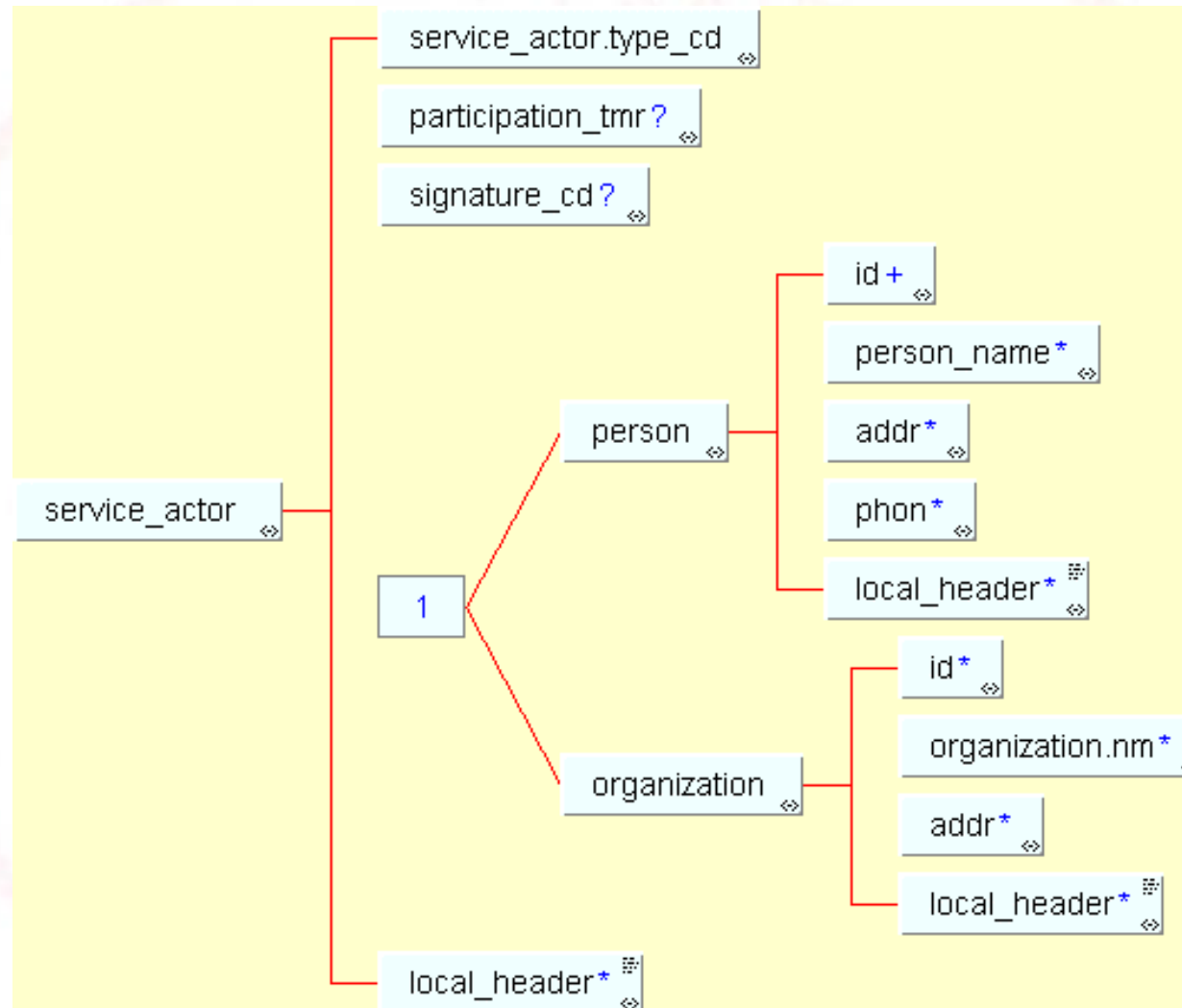
Documento CDA



Service Actor



Service Actor



CDA XML



```
C:\KEG\Ballot\2ndCommBallot\leveloneH.xml - Microsoft Internet Explorer
File Edit View Favorites Tools Help
- <levelone>
- <clinical_document_header>
  <id V="a123" AA="100.12.92.81.5.7" />
  <document_set_id V="B" AA="100.12.92.81.5.7" />
  <version_nbr V="2" />
+ <file_nm T="ED">
  <clinical_document_header.service_cd V="11488-4" S="2.16.840.1.113883.6.1" PN="Consultation note" />
  <origination_dttm V="20000407" />
  <clinical_document_header.confidentiality_cd ID="CONF1" V="N" />
  <clinical_document_header.confidentiality_cd ID="CONF2" V="R" />
+ <document_relationship>
+ <fulfills_order>
+ <patient_encounter>
+ <legal_authenticator>
+ <originator>
+ <originating_organization>
+ <provider>
+ <patient>
+ <originating_device ID="DEV1">
  <local.header ignore="all" descriptor="MyLocalTag">... extra stuff that is only used locally ...</local.header>
</clinical_document_header>
- <body>
- <section>
+ <caption>
- <paragraph>
  <content>Henry Levin, the 7th is a 67 year old male referred for further asthma management. Onset of asthma in his teens. He
  was hospitalized twice last year, and already twice this year. He has not been able to be weaned off steroids for the past
  several months.</content>
</paragraph>
</section>
+ <section>
- <section>
  <caption>
  <caption_cd T="CV" V="11496-7" S="2.16.840.1.113883.6.1" />
  Assessment
  </caption>
- <list>
- <item>
  - <content>
    Asthma, with prior smoking history. Difficulty weaning off steroids. Will try gradual taper.
  - <coded_entry>
    <coded_entry.value T="CV" V="D2-51000" S="2.16.840.1.113883.6.5" />
  </coded_entry>
  </content>
  </item>
</list>
</section>
</body>
</levelone>
```

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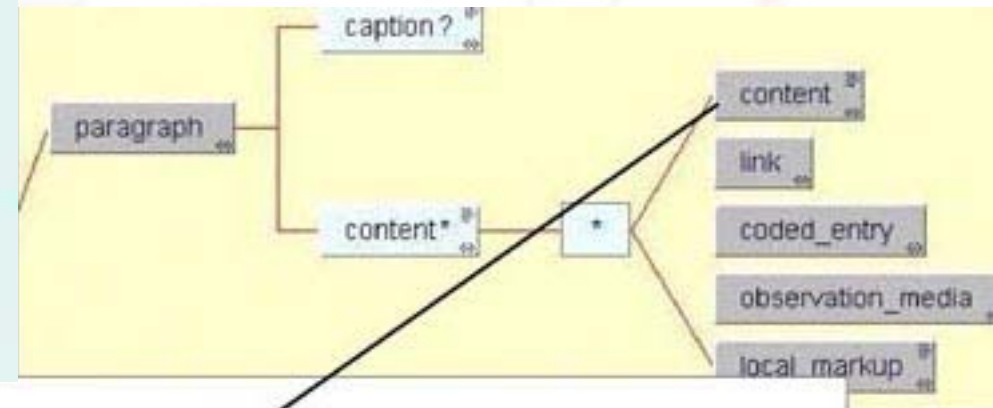
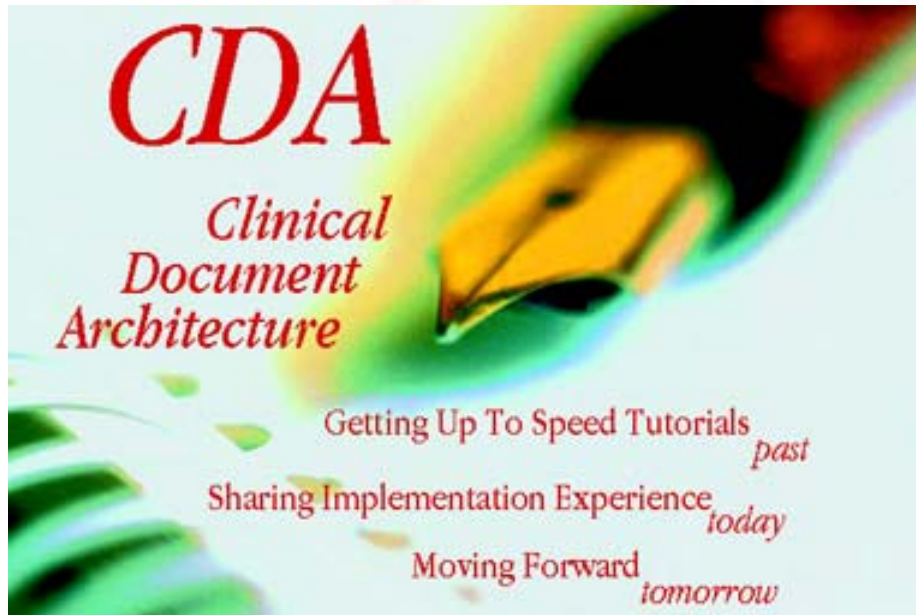
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Header

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CDA XML



```

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- <caption>
  <caption_cd V="11496-7" S="2.16.840.1.113883.6.1" />
  Assessment
</caption>
- <list>
- <item>
  - <content>
    <content ID="String001">Asthma</content>
    , with prior smoking history. Difficulty weaning off steroids. Will
    try gradual taper.
  - <coded_entry>
    <coded_entry.value ORIGTXT="String001" V="D2-51000"
      S="2.16.840.1.113883.6.5" />
  </coded_entry>

```

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