From paper to bits. A digital edition of medieval cartulary (cod. Vat. Lat. 3880)



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The immaterial source: a new historical research frontier.

Language and practices mutations triggered by the advent of computer technology in historical context



A new historical communication frontier



Change in relations between historians and historical reflection (sources)



A provocation:

welcome the challenge of immaterial document?

Objective:

A medieval cartulary digital edition,

Not just a transcription in electronic format but ... A virtual lab consists of:

- documents
- their interpretation
- a range of survey instruments (summaries, inventories, essays, bibliographies, search engine, etc..) that enrich texts and encourage new ways of enjoyment

Basic principles:

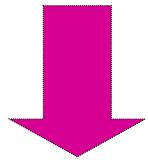
- technological applications: **not "neutral" traditional content vehicle**, but > **deep epistemological implications** on the objects they study
- new ways of documentary approaching
- technology, if properly exploited, supports and enhances traditional academic goals ...
- ... and move the dividing line between research and communication, showing the underlying mechanisms of the exegetical issues.

In the beginning was the data-bases:

Coding languages exceeded decontextualization

The question: computer representation of documents in the historical

- identity preservation,
- ability to perform processing and research,



support a close relationship between data and context

Data-Base:

Quantitative history (since the Sixties)

Limits:

Selective approach to sources

Powerful only in ordinary and repetitive areas

Search only constant elements

The individual fragments are extracted from the membership information, de-contextualized, just to be more efficiently handled

Historian's **demands**:

Table Ronde CNRS (1975)

"satisfying answers to information processing based on a medieval documentary sources could be achieved only by storing documents in extenso"

(A. Pratesi)

A possible answer:

digital imaging



Handicaps:

Even if formally in electronic format, documents suffer all the limitations of the texts presented on a computer, such as:

- inability to perform processing,
- difficulty of reading and context identification.

The added-value given by the computer processing is achieved through



Development of a source's model representation that:

- allow data's use without impoverishing many meanings;
- retaining nuances and ambivalence;
- be able to recover, reorganize and aggregate information structures within documents;
- maintains the form-integrity

A proposal:

digital coding

Encoding is an information representation of digital media in a computer-readable format (Machine Readable Form, MRF)

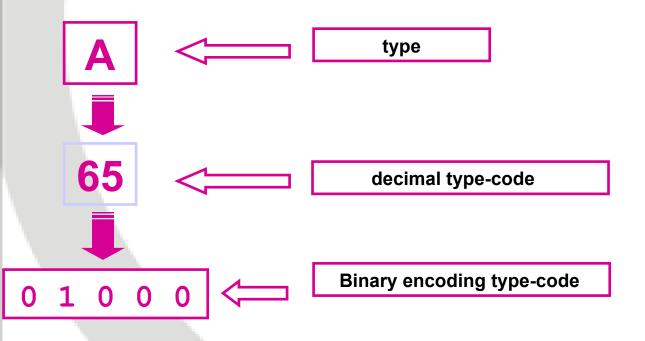


Keywords:

metadata and markup as historical steps.

Low-level coding (encoding level 0)

At level zero, each text transcript by computation immediately encoded by the machine using a binary (0 and 1).



Strong encoding (high-level encoding):

- enriches the text with information relating to structural dimensions,
- organizes the text in macro-textual structures,
- divided the text into linguistic structures.



transforms raw-data into a explicit information-source.

The high-level encryption allows you to make explicit any interpretation you want to associate with the text.

How to encode? The markup languages

- A markup language is a set of descriptive markup conventions of texts.
- Structural information is represented by adding to the text labels or <tag> that "mark" blocks of text, which is assigned a particular interpretation.
- It's the principle of the database without the database.
- Specifically, the insertion of the markers (tags) within a text allows you to assign a structure to the representation, performing a diacritic and and self-reflexive function.

Markup conceptual nodes:

- Identify structures and interrelations
- It forces the analysis of the **text and context** elements
- It's simultaneously a **text's part** and **information** on the text
- It's similar to a **diplomatic transcription** to computer use

Encoding operation as a complex mechanism modeling (and modeled on) the subject matter

historical survey focal point

The character-encoding doesn't exhaust the issues related to representation of a <u>text's</u> characteristics:

- complex object
- many structural levels

Markup languages allow representation or control of one or more structural levels of a text document

procedural markup (or typographical):

instructions on formatting and text layout (RTF, TeX)

declarative markup (logical or descriptive):

shows the role played by the block of text that refers (SGML, XML)

The Liber Montis Regalis Privilegiorum

Sanctae Ecclesiae

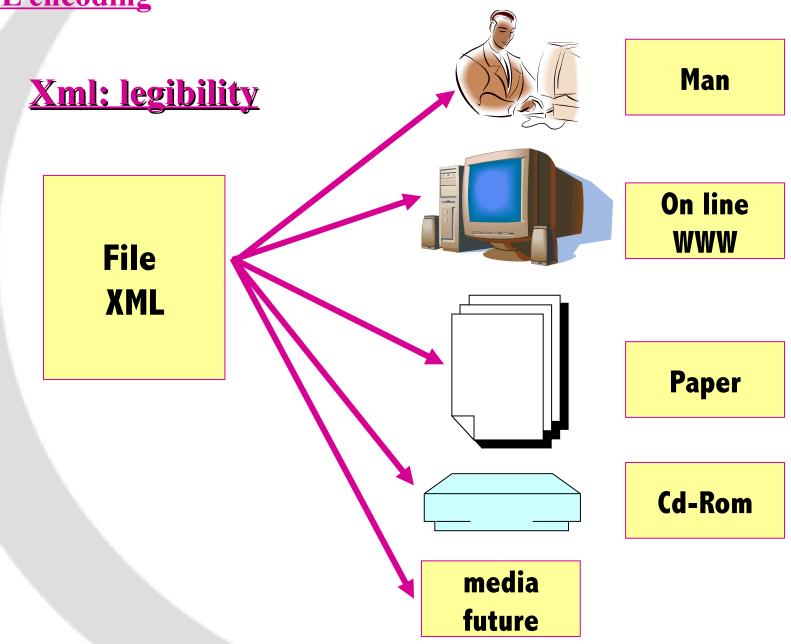
electronic edition:

XML encoding.

Coding standard choice: <u>eXtensible Markup Language</u>

XML features:

- •Declarative languages family (SGML)
- •Developed by the W3C in 1998
- Advanced processing of HTML
- •Textual Format: text and markup are strings of characters
- Public domain standard
- •Hardware or Software indipendent
- •Readable and archived on any digital media (even future)
- •**SPEED**: but also stands for *Storing*, *Publishing and Exchanging Electronic Documents*.



XML: advantages for historians

- •encoding language flexibly to scholars needs
- •makes available full text
- •shows partitions and functions of the individual pieces of text
- •maintains context
- •meta-information hidden in the output
- •hierarchical scheme: nouns regularization, remarkable things
- •dynamically <u>selects and sorts the contents</u> (automatic construction of indexes, lists, concordances, etc.).

XML: how it works

XML is a generic meta-language does not provide any prescription about form, quantity or markers name.

XML syntax:

- **ELEMENTS**>: data on the constitutive structure of a document, whose contents can be
- other elements: < **ELEMENTs-CHILDREN**>
- free text: <**#PCDATA**>
- **ATTRIBUTES**>: second-level information regarding properties of elements.

A look at the source:

Brief historical and diplomatic analysis of code Vat Lat. 3880.

Incipit liber printegioza Sa ms us Realls Edelie, proeming. 12 valous musator outina monto Regalis Archieps untilis à fixel 12 Salute ix file hore flote Inch ta catholicz prapii fluora. arca culti o uni nois amplianoù loozog nenerabi lui deta iteca. memoram org. lanoib exi Il poa! Fileao fuppmi prevent. Ot te uota fizes. Iuicta fires pfeaage caritas corre lucear coză hoib? sie lăparque man spleme in tre noctis obfarmate. luminis fin clarita te filaefor, quaten uivenqui ai avittavu; pia opa puccent wor redoritiet om pies q eis gradose vonati. Get fic it hoies Blima ti. regali porena claruert. ita i el ospectu Blofos efficet pietas finalin actionii. Ca apr. as findlog cupin puentre notica. Oz olis recolence clarecs memorie. Rex Guille Seamo? Illufts politi i honore et land puni nois gloter genitus rigis m. Galia montes regal murabile spe. et archoole menuftans thructura otherent politi Therah ac munifica terta, pio tenotoce proite to fine boje copili' i out fie regres fiche pub! Il' fino oticines to minio mena libetalitate treo chie figure væg eache oblatis. voats lufficité to te oulir rationir eroe. poles opi ma nui fuay ber eredo thibys went labo rb p q fito falubret puice. ac piclofos event furrage picla, at orlarection falult remeny appoinone parë Vr victa ecela plena cobrata blëtare gantët. cra upa i miltre ob fequeres prio i cape ab out neau pregerent surfib! . i pulcaroie pa s ac italinadis fionce deferret efeceret. p opis foliouss. no verset i poster uch que i firma, privir fino. tav istar ser terca at exeption plant ique prefit

pomorii alion prep firon utulq fecus orion regui. Pennay Impacox . 4 mor cometti. ac baronii Siinoy pintifiai. Platoy rappula ac alian figlay p foran. Prinilegis imi nitant, exettoit primire. que pulesto ra alig outefa. i outis put tlose reconta. Coronate provent Torbue collocata mane bar Toog Nos Arnalo võe earle archie por as ipi carie remmen faim mifatto minina pmot i nolenab te troy buota prapii plenă le noucia fatif fiar. 2 mai mita excus fume uolentib. longe i glicois labon abfir, z facile ess op i gruf omerat. oca pullegia librates i imunitates otine aa. Tuni wolumen phocle foptore puro in veorgeoa. facetes tengae upop 8 abo as ibil transch ilBscpto nolnie nil ao out ul sie gedun' viminum q lensii mure aut minet itellecui. Ner es ora de erric pulla pledenoi. 1 1 la noluie polende or forour iceffit. Ma mita uagane erellat grees ares arabicas feu faracenias exarata fine forta littie bullis bullata aureis er phibers. q'ilatinu phoù revada irprete actore veo l'also îtevim uoluie opulare. ति सार्यक्षेत्र भी स क्लार प्रेमाकिए रहेपालका स्वार रहेगालका हिल्ला है कार्य रहेगालका किला है gop manigreflozes penas amltas i culte pulegue grecas enter de ware pleroft consit. Dec q ao ples le legna reperind pulegra, transchie Boo feam uoluie pma pre ouner pulla librares consuler mellios. tivulta Resu Resunan prapa el perator fuorellor wor: In feda tio. co firmatioes.approbances.pulla.imunit tes. tivulta fumoz ponessai Romanoz onoz Caromalui Birptoib whoatai ja

A look at the source

Liber Privilegiorum Sanctae Montis Regalis Ecclesiae

Cartulary > most significant documents relating to Archdiocese of Monreale (management of territorial patrimony)

Planned by Archbishop Arnaldo di Rassach (in. XIV sec.)



4 copies:

- 1) lost
- 2) ms. F.M.5 BCRS (fragments: the original text?)
- 3) ms. XX E 8 BSAM
- 4) ms. Vat. Lat. 3880 BAV

A look at the source

Palaeographic-codicological Considerations:

- postdated (fn. XV sec.)
- paper-code (cc. 56), good condition, simple workmanship
- only hand in two columns (Gothic script)
- calligraphic initials and red-titles.



Contents: 4 parts: 90 documents

- 1) 26 royal documents
- 2) 22 papal documents
- 3) 14 bishop documents
- 4) 28 documents (public documents, letters, sentences)

modeling and encoding technical characteristics.

The electronic encoding pattern is not neutral, but always related to research needs.

An important choice:

TEI or ex novo?

Text Encoding Initiative:

Electronic encoding of humanistic texts Guidelines

is an international model

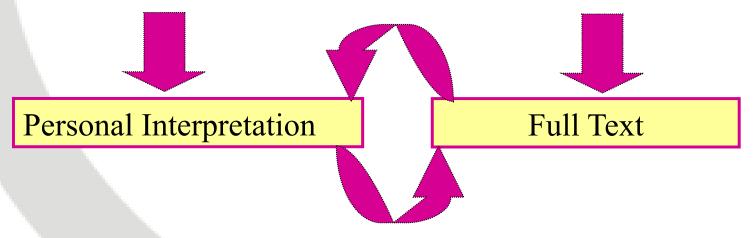
but:

is oriented marking the typographic appearance of the source, and omits logical and functional elements.

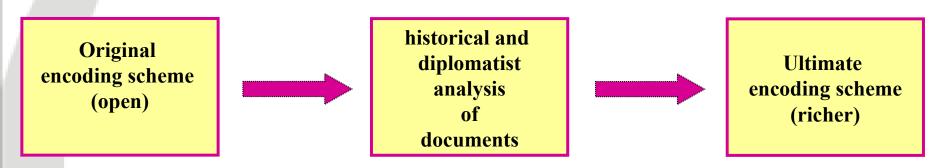
Source Specificity



based on the documents (semantics and specific historical and territorial)



Methodology:



Particularly:

source code base exploration

relevant data identification

entities and relations disambiguation

designing encoding system tailored to object, channel and target.

Encoding proposal: 2 macroblocks

1) Meta-information system

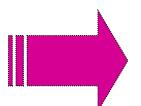
2) Meta-text information

Meta-information SYSTEM block:

- **posizione** documento: <**NUMDOC/>**
- datazione: <DATA/>
- paper <u>numbers</u>: <NUMCARTE/>
- <u>tradition</u>: <TRADITIO/> subelements <ORIG/> and <COP/> for <u>originals</u> and <u>copies</u>
- past editions : <ED/>
- past summaries precedenti: <REG/>
- <u>bibliography</u>: <BIBLIOGRAPHY/>
- summary: <REGESTA/>
- document comments: <COMMENTS/>

Meta-text information Block:

```
<TENOR/>
<PROTOCOLLO/>
    <INVOCATIO/>
  <INTITULATIO/>
  <INSCRIPTIO/>
  <DTCRON/> (= data cronica)
  <DTTOP/> (= data topica)
  <APPRECATIO/>
  <FORMPERP/>
<TESTO/>
    <ARENGA/>
  <NARRATIO/>
  <PROMULGATIO/>
  <DISPOSITIO/>
  <SANCTIO/>
  <CORROBORATIO/>
<ESCATOCOLLO/>
    <DTTOP/>
  <DTCRON/>
  <RECOGNITIO/>
  <SUBSCRIPTIO/>
  <SMS/>
  <IT/>
  <COMPLETIO/>
```



Markers defining the joint documentary of the speech

Not rigid grid: allows many exceptions

Meta-text information Block:

```
toponyms (tag <TOP/>):
required attributes
nm = "name standardisation"
id = "toponym identification: "Name, City, Province"
where it's not possible with value "unidentified"
Where is doubtful with value "uncertain"
Place names identified
loc = "historical location"
ub = "location"
ex. <TOP nm="Saganum" id="Sagana, Monreale city, Pa" ub="Contrada Sagana"
loc="Val di Mazara">Saganum</TOP>.
```

Meta-text information Block:

```
Geographical features (tag <TOP/>):
required attributes
nm = "name standardisation"
id = "element name, type"
type= "geographical area"
loc = "historical location" (with possible value "uncertain")
ub = "location" (with possible value "uncertain")
ex. <TOP nm="Cribellum, acqua" id="Gabriele spring, Palermo city, Pa"
ub="Caputo mountainside" loc="Val di Mazara" tipo="spring">aquam
Cribelli</TOP>.
```

Meta-text information Block:

```
Micro -toponyms (tag <TOP/>):
required attributes
nm = "name standardisation"
id = "micro-toponym identification: "Name, City, Province"
type= "toponymic category"
loc = "historical location" (with possible value "uncertain")
ub = "location" (with possible value "uncertain")
es. <TOP nm="Calatrasis, castellum" id="Calatrasi Castle, Roccamena city, Pa"
ub="Mount Maranfusa" loc="Val di Mazara" tipo="castle">castellum
Calatrasi</TOP>.
```

Meta-text information Block:

```
People (tag <PERSON/>):
required attributes:
nm = "name standardisation"
id = "person identification" (with possible value "unidentified")
optional attributes:
Kinship attributes = "fil, pat, mat, sor, fr, vir, ux"
tit= "title, office, occupation or profession"
ex. <PERSON nm="Silvester, comes Marsici" id="Silvestro, Marsico earl"
tit="comes" fil="Guillelmus, comes Marsici">Silvestri comitis
Marsici</PERSON>.
```

Meta-text information Block:

```
Ecclesiastical institutions (tag <ECCL/>):
required attributes:
nm = "name standardisation"
id = "institution identification" (with possible value "unidentified")
tipo = "institution type"
ub= "city or province" (with possible value "unidentified")
ex. < ECCL nm="Montis Regalis, ecclesia" id="S. Maria Nova of Monreale"
tipo="church" ub="Monreale city, Pa">Montis Regalis ecclesie</ECCL>.
```

Meta-text information Block:

Lists and descriptions of goods: tag <BENIMM/>

tag <BENMOB/>

Events and historical facts:

tag <EVENT/>

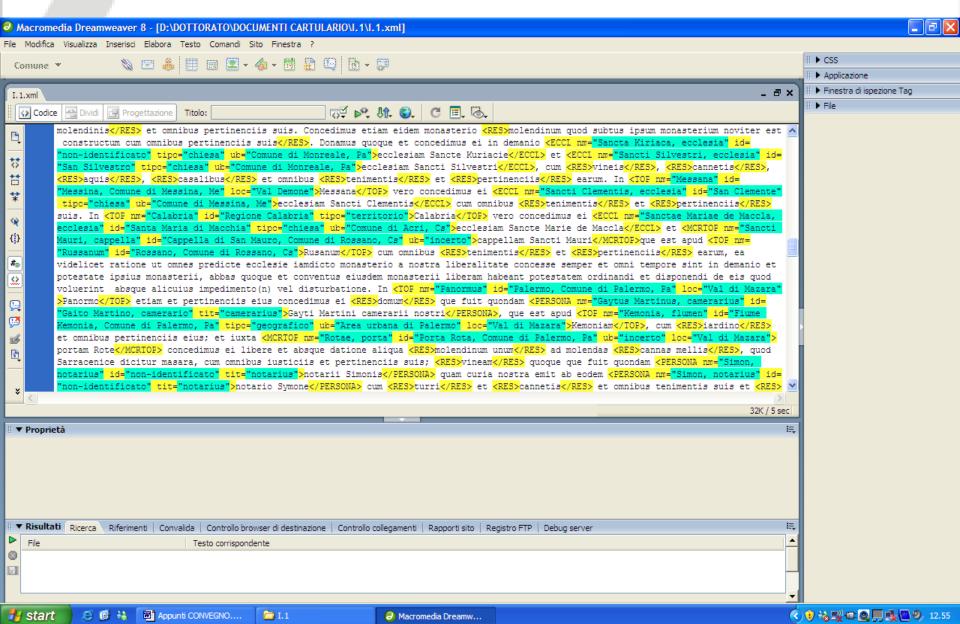
Document editor:

tag <SCRIPT/>

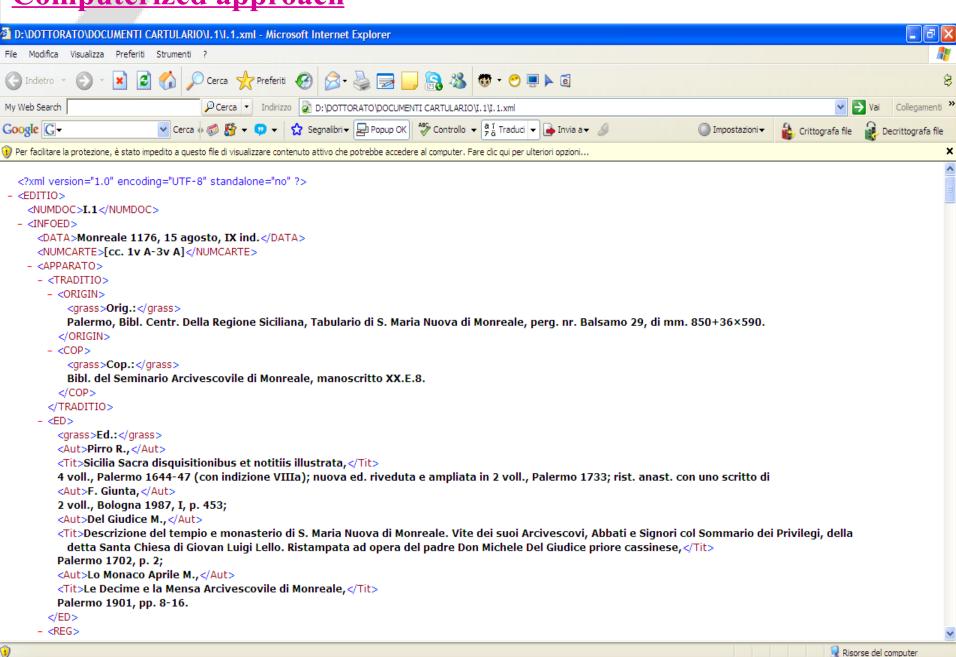
witnesses:

tag **<TT/>**

Marking with a text editor



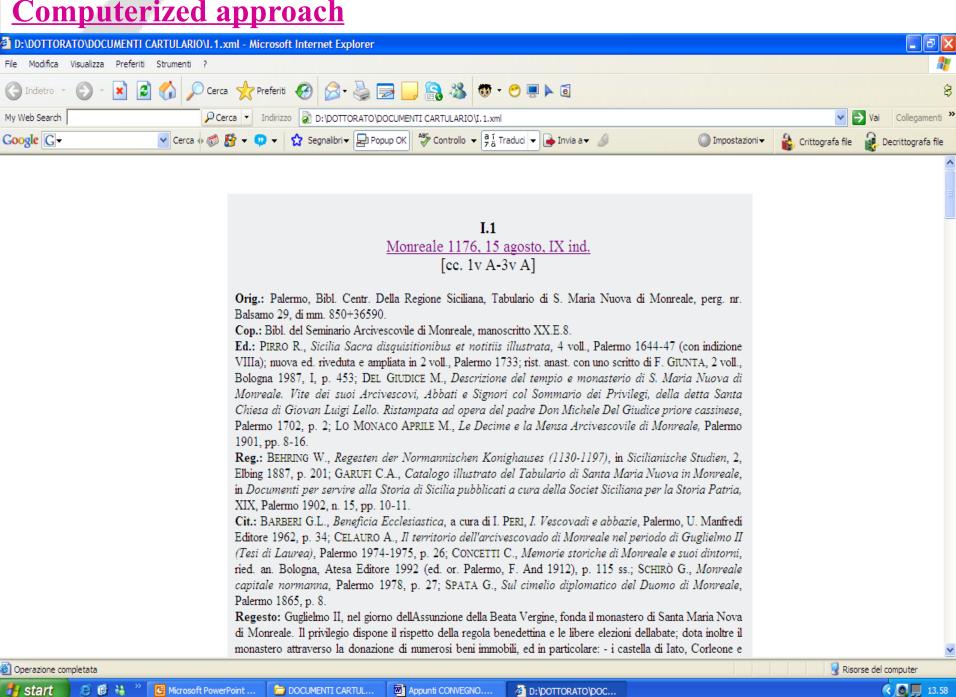
🎳 start



Ø D:\DOTTORATO\DOC...

Appunti CONVEGNO....

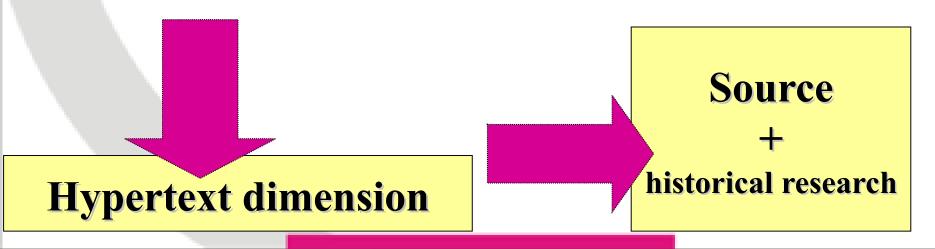
(() % 5 () ()



The historic editor: walking through documents and hypertext.

Aim of technological frame:

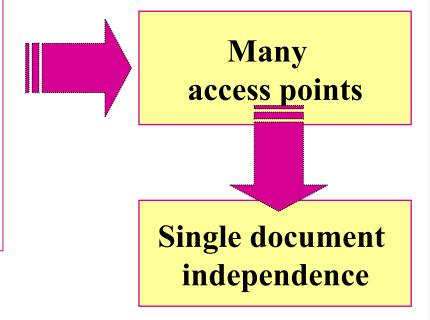
- connect and interweave different levels (documents with documents, papers or documents with technical data sheets etc..)
- describe and represent the contents dynamically
- create an intersection laboratory between technological elements, historical and innovative exhibitions
- make visible the methodology adopted
- obtain multiple access levels



Io level: Documents

Index (general and particular chronological, typological, etc..)

<u>links</u> (between documents, critical essays, to other sources, datasheets)



II^o level: frames

Tools Kit (bibliographies, diplomatic and codicological analysis, summaries, search engine etc.)

<u>essays</u> (ex. *Liber* history, Monreale history etc.)

Prototype of digital edition

http://vatlat3880.altervista.org/home.html



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http://vatlat3880.altervista.org/home.html



Introduzione

▼ Il Liber Privilegiorum della chiesa

Un cartulario ecclesiastico siciliano Il manoscritto Vat.Lat. 3880

▼ L'edizione diplomatica

Accesso diretto ai documenti

▼ Storia e territorio di Monreale

S. Maria Nova nei secc. XII-XV Il territorio e la gestione del patrimonio

▼ Dal manoscritto all'ipertesto

Dalla fonte alla metafonte Il Liber Privilegiorum on line

▼ Note tecniche

Il progetto di ricerca Architettura del sito Criteri di edizione Foglio di stile Document Type Definition Come consultare testi e documenti

▼ Strumenti

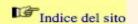
Contatti

Indice del sito Schede descrittive Liste XML e Indici Elenchi dei documenti Regesti Bibliografia Link



Storia e territorio di Monreale

Dal manoscritto all'ipertesto



Introduzione Nel solco della tradizione, ma verso il futuro



Definire i caratteri e i criteri ispiratori di un lavoro di ricerca non è mai impresa facile. Le numerose suggestioni da cui si è partiti, al termine dell'opera si intrecciano in un tutt'uno che appare inestricabile e che proprio per questo però sembra esigere degli opportuni chiarimenti. La dialettica tra passato e presente che si intende presentare si configura infatti come una relazione che si è compiuta attraverso slanci, movimenti, idee spesso lontane tra loro, svolgendosi lungo un percorso che dall'epoca medievale ha portato alla contemporaneità: una distanza che appare siderale e che invece, nel gioco storico proposto e nel costante superamento delle ipotesi iniziali, ha trovato una sintesi – si spera – efficace.

Il filo che lega le tre parti, apparentemente così diverse, di cui si compone questo progetto è, in qualche modo, mamaria. Su quasto tama si daglinona gli interessi aba banna quidata l'indogina storica sulla fanta. La cua

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Architettura del sito

Criteri di edizione

Foglio di stile Document Type Definition

Come consultare testi e documenti

▼ Strumenti

Indice del sito

Schede descrittive

Liste XML e Indici Elenchi dei documenti

Regesti

II.1

Ferentino 1174, 30 dicembre, VIII ind.

[cc. 21r B-22r B]

Orig.: Palermo, Bibl. Centr. della Regione Siciliana, Tabulario di S. Maria Nuova di Monreale, perg. nr. Balsamo 31, di mm. 730+35×563.

Cop.: Bibl. del Seminario Arcivescovile di Monreale, manoscritto XX.E.8.

Ed.: PIRRO R., Sicilia Sacra disquisitionibus et noiiis illustrata, 4 voll., Palermo 1644-47; nuova ed. riveduta e ampliata in 2 voll., Palermo 1733; rist. anast. con uno scritto di F. Giunta, 2 voll., Bologna 1987, I, p. 451; Del Giudice M., Descrizione del tempio e monasterio di S. Maria Nuova di Monreale. Vite dei suoi Arcivescovi, Abbati e Signori col Sommario dei Privilegi, della detta Santa Chiesa di Giovan Luigi Lello. Ristampata ad opera del padre Don Michele Del Giudice priore cassinese, Palermo 1702, p. 34.

Reg.: Lello G.L., Historia della Chiesa di Monreale, Palermo 1702, n. 3; Garufi C.A., Catalogo illustrato del Tabulario di Santa Maria Nuova in Monreale, in Documenti per servire alla Storia di Sicilia pubblicati a cura della Società Siciliana per la Storia Patria, XIX, Palermo 1902, n. 10, p. 8; JAFFÉ-LOEWENFELD P., Regesta Pontificum Romanorum, Photomechanischer Nachdruck, 2 voll., Graz 1956, n. 12403.

Cit.: CELAURO A., Il territorio dell'arcivescovado di Monreale nel periodo di Guglielmo II (Tesi di Laurea), Palermo 1974-1975, p. 21; SCHIRÒ G., Monreale: capitale normanna, Palermo 1978, p. 26.

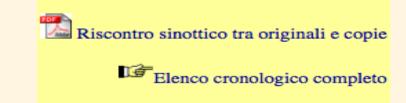
Regesto:

Alessandro III promuove Santa Maria Nova di Monreale alla condizione di abbazia nullius a pieno titolo, concedendole importanti privilegi ed esenzioni, primo fra tutti l'indipendenza giuridica da qualsiasi autorità ecclesiastica, ad eccezione della Santa Sede; conferma tutte le proprietà della nuova fondazione, acquisite o da acquisirsi, sia all'interno che all'esterno del Regno; concede all'arcivescovato tutte le ordinazioni - ovvero il controllo su tutte le sue chiese, le consacrazioni di altari, fonti battesimali e chiese, del crisma e dell'olio santo. Ordina inoltre che, nell'eventuale

Prototype of digital edition

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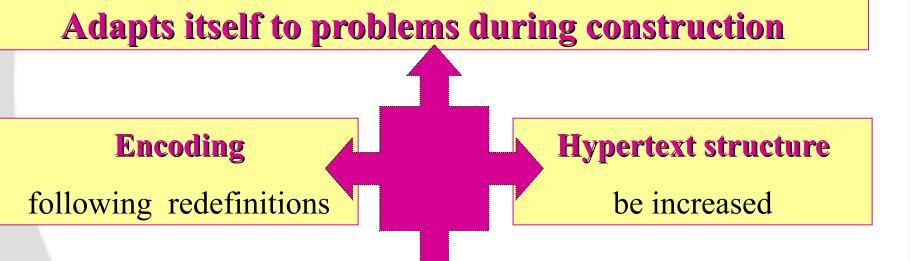
Documenti regii (ordine alfabetico per autore)



Autore	Data	TÉ .	Doc.
Alfonso V d'Aragona	In castris prope Monduriam 1443, 10 settembre, VII ind.	regesto	IV.26
Costanza d'Altavilla	Palermo 1196, dicembre, XIV ind.	regesto	I.24
	Palermo 1196, dicembre, XIV ind.	regesto	I.25
Enrico VI di Svevia	Palermo 1195, 2 gennaio, XIII ind.	regesto	I.13
Federico II di Svevia	Palermo 1211, 15 gennaio, XIV ind.	regesto	I.19
	Brindisi (1211), 22 marzo, IX ind.	regesto	I.20
	Brindisi (1211), 22 marzo, IX ind.	regesto	I.26
	Messina 1211, aprile, XIV ind.	regesto	I.14
	Messina 1212, febbraio, XV ind.	regesto	I.15
	Wurzburg 1220, luglio, VIII ind.	regesto	I.16
	Brindisi 1221, 22 marzo, IX ind.	regesto	I.17
Federico III d'Aragona	Palermo 1306, 28 ottobre, V ind.	regesto	IV.17
Giovanni d'Aragona	Saragozza 1464, 4 dicembre	regesto	IV.28
Giovanni Moncada	Palermo 1462, 13 settembre, (XI ind.)	regesto	IV.27
Guglielmo Duca di Puglia	1115, maggio, VIII ind.	regesto	I.21

To sum up

To sum up



Enrichment of disciplinary tradition and innovation

To sum up

"In history, as in any other field, doesn't matter the machine, but the question. The machine is interest only because it allows to tackle new and original question"

(E. Le Roy Ladurie, *Lo storico e il calcolatore*, in Id., *Le frontiere dello storico*, Roma-Bari, Laterza 1976, pp. 3-7:3).

Thank you for your attention