



**ATHENA
PLUS**
Access to cultural heritage
networks for Europeana



digital exhibitions

METADATA FOR THE DESCRIPTION OF DIGITAL EXHIBITIONS: THE DEMES ELEMENT SET

Version 0.9 (August 2015)



Ministero
dei beni e delle
attività culturali
e del turismo



**Michael
Culture**
Association

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OF DIGITAL EXHIBITIONS:
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edited by

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Digital Exhibitions
Working Group
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Foreword

The aim of the AthenaPlus project is to support cultural institutions in providing object data for publication in Europeana and to encourage them in using and reusing cultural content for education and tourism, also through digital exhibitions.

A way of supporting cultural institutions is by providing instruments and tools helping to enlarge their knowledge on digitisation issues.

This booklet presents a metadata set for describing digital exhibitions, produced by a dedicated European working group active in AthenaPlus, which already started to work during the Athena and Linked Heritage projects.

During these past projects, several booklets were already printed dealing with standards, GIS, persistent identifiers, LIDO and Terminology.

DEMES represents a new result and wants to fill a gap in order to allow digital exhibitions to be better described, catalogued, searched on the web and reached by a wider number of potential users.

Simonetta Buttò

AthenaPlus Project Coordinator

Foreword

There cannot be any doubt that a metadata set for the description of digital exhibitions is very much needed today, especially because more and more digital exhibitions are created by more and more cultural institutions.

Digital Exhibition Metadata Element Set (DEMES) presented in this booklet is in version 0.9, open to discussion by the community. We invite everybody to test and to comment it.

DEMES should enable cataloguing, collecting and exchanging digital exhibitions in a meaningful way.

Version 1.0 will be published at the end of this year.

I would like to thank all the members of the Digital Exhibitions Working Group for their active participation and especially Giuliana De Francesco for compiling and editing this booklet.

Monika Hagedorn-Saupe

Digital Exhibition Working Group Coordinator

For comments and suggestions, please send an e-mail to info@digitalexhibitions.org

Introduction

The international Working Group on Digital Exhibitions (<http://www.digitalexhibitions.org>) was established in 2011 with the aim of exploring current practices and identifying key questions related to the development and use of digital exhibitions.

Members of the working group are experts involved in several European projects with a long experience of working collaboratively.

At the time when the group started its activity, Europeana had just begun hosting, then producing and delivering digital exhibitions in order to communicate the richness of European digital cultural content. As a matter of fact, digital exhibitions were increasingly produced over the past five years.

Nowadays, many museums and cultural institutions offer digital exhibitions for their users to enjoy, and more than 37 multilingual digital exhibitions can be browsed through the Europeana Exhibitions website (<http://exhibitions.europeana.eu/>). This has resulted in even higher attention

being paid to the role of digital exhibitions for the communication and promotion of culture and cultural heritage through digital means.

There is, of course, much more than communication: digital exhibitions allow presenting side by side materials that would be impossible to bring together in the physical reality, and they open almost unlimited possibilities for contextualization. As with any exhibition, the condition for achieving quality is adopting a strictly curatorial approach when conceiving and realizing a digital exhibition.

The research activities of the working group are currently being carried on in the framework of the AthenaPlus project (Access to cultural heritage networks for Europeana, <http://www.athenaplus.eu/>).

AthenaPlus is a CIP best practice network that contributes 3.6 M metadata objects to Europeana and experiments with enriched metadata objects to Europeana as well as the experimentation with enriched metadata in order to adapt digital cultural content to the diverse users' needs in the fields of education, tourism and leisure.

AthenaPlus started in March 2013 and run for 32 months; the project's consortium is composed of 41 partners from 21 EU Member States.

In the framework of the AthenaPlus project the CMS MOVIO was developed (<http://wiki.athenaplus.eu/index.php/MOVIO>), an open-source tool facilitating the realisation of online digital exhibitions. MOVIO back-end offers users valuable functionalities, helping curators to make their digital exhibition a rich display of their institutional digital cultural content. The tool set includes services such as media archive, ontology builder, story teller, different types of image galleries, hotspots, maps, timeline and other. MOVIO digital exhibition module already includes many of the descriptive elements that are going to be described below, as the Digital Exhibition Metadata Element Set (DEMES).

The outputs of the activities on digital exhibitions carried out in the framework of the AthenaPlus project are available at the following URL: <http://www.athenaplus.eu/index.php?en/200/digital-exhibitions>.

1. Describing digital exhibitions

The working definition of digital exhibition adopted by the working group so far is the following: *A digital exhibition is based on a clear concept and is well curated. It assembles, interlinks and disseminates digital multimedia objects in order to deliver innovative presentations of a theme, or series of themes, allowing user interaction to a great extent.* [www.digitalexhibitions.org]

The working group on digital exhibitions was aware that exhibitions, both physical and digital, are usually described by museums, libraries, archives and other cultural organisations in charge. Descriptions of both physical and digital exhibitions are mainly provided in order to inform about the initiative, communicate its aims and content and attract the public who could be interested in the visit and/or could take advantage of the displayed materials. There are also lists, catalogues or inventories of exhibitions aiming at including all exhibitions organised or produced by the same organisation, dealing with the same theme, taking place in the same area, etc.

In most cases, the descriptions of the exhibitions are provided free-text or using non-structured formats. Practice changes across countries and institutions.

Some members of the working group, for example, were involved in the Euromuse project, whose core activity included disseminating information about exhibitions taking place in museums across Europe. In doing so, a description of the exhibition was always provided, but it did not have a fixed structure and articulated only a few basic elements, leaving space to a free text description.

Some members of the group, however, had long been members of the MINERVA and MICHAEL series of projects and were aware of the work done for the development of theoretical and practical tools for structured inventories of digital cultural content and the related benefits, particularly in the framework of Europeana.

The working group as a whole was therefore aware of the crucial role a well-defined structured description of digital exhibitions could play in order to:

- Facilitate the discovery of the digital exhibitions through search engines, cultural portals or other services;
- Support the identification, selection and access to digital exhibitions by the interested target public;

- Improve the current descriptive practice through standardization;
- Facilitate data sharing and exchange of information about digital exhibitions;
- Have digital exhibitions included, alongside with any other type of digital cultural content, in local, regional, national, European portals for public access, via mapping into a structured data model based on a well-defined metadata format.

With these aims, of improving findability, use and enjoyment of cultural digital exhibitions, the working group wishes to suggest a structured metadata format for their description.

Our proposed scheme is intended as a contribution to the dissemination of a practice of systematic description by the very organisations that produce and make available digital exhibitions. For this reason, the structure was kept relatively simple and elements for the most part well-known and widely used in the descriptive practice (e.g. cataloguing) by cultural organisations were selected. This element set is mostly based on the Dublin Core family of standards.

The metadata set could be improved, integrated and updated based on the experience accumulated in the implementation and use of this scheme for the structured description of digital exhibitions. The structure could be further elaborated in order to comply with the

CIDOC-CRM formal ontology for cultural heritage and with linked open data requirements.

Further work will include the development of standard terminologies and metadata encoding schemes appropriate for digital exhibitions. For example, a standard terminology corresponding to the “Type” element would enable the grouping of digital exhibitions based on a meaningful classification.

A last remark concerns the element “Identifier”. We are aware that, although the ISCI (International Standard Collection Identifier) standard is available and in use already for a few years, there won’t be many digital exhibitions making use of it, or of any other standard identifier. The working group recommends this as a good practice also because such a reference, if used in the description of the individual objects grouped in the exhibition, would establish a link between the objects and the digital exhibition they are part of.

2. Approach and methodology

An exhibition typically groups objects (any number) and context information. It seemed therefore straightforward to us to look at digital exhibitions as a specific type of digital collection.

When looking at reference standards for the description of digital exhibitions, we therefore started from the analysis of metadata sets devoted to collection description, with the aim of identifying a first set of basic metadata elements suitable for the description of digital exhibitions.

As a theoretical background, the work done by Michael Heaney with his *Analytical model of collections and their catalogues*, the MICHAEL data model and the work meanwhile developed by Europeana, in particular the article *Representing cultural collections in digital aggregation and exchange environments*, were taken into account.

Through a quick survey of international metadata standards for collection description, the following standards were identified as relevant:

- NISO Collection Description Specification (2005)
- MICHAEL Data Model (2005)
- Dublin Core Collections Application Profile (2007)
- International Standard Collection Identifier – ISCI (ISO 27730:2012)

After having analysed these standards, the metadata elements set included in the International Standard Collection Identifier - ISCI (ISO 27730:2012) was selected as the main reference, as it was the latest and most updated, was recognised as ISO standard and made reference to the previous metadata standards for collection description. The core metadata elements set included in ISO 27730 is based on the Dublin Core Collections Application Profile (March 2007, available online at <http://dublincore.org/groups/collections/collection-application-profile/>; summary at: <http://dublincore.org/groups/collections/collection-ap-summary/>).

Both the Dublin Core Collections Application Profile and the metadata elements set included in the ISCI are cross-domain (transversal to libraries, archives, museums, other types of cultural organisation and the heritage sector) and concern aggregations of objects of any kind, physical, digital, hybrid or virtual. They therefore do not specifically target digital collections or exhibitions.

Having in mind the specificity of the digital exhibitions, and aiming at providing a metadata set that, although simple and basic, was suitable for an accurate and

comprehensive description, the ISCI set of mandatory and recommended elements was analyzed and elaborated in order to adapt the set of elements to the specific characteristics of digital exhibitions.

To the ISCI core set some additional elements deemed relevant for digital exhibitions were added, and elements that appeared to be redundant were eliminated.

Then, the use of each element in the framework of the description of a digital exhibition was specified.

The next step was testing the identified metadata set through the actual description of some sample digital exhibitions, in order to check if amendments were needed. In this phase, we also agreed on the need for a potential multilingual description, which implied the mandatory use of the language attribute for all free text fields.

Finally, we ranked the descriptive elements as mandatory, recommended and optional, in order to facilitate the use of the scheme at different levels of complexity, and defined if each element should be repeatable.

3. DEMES Structure and Elements

At the end of this process, we had a set of 30 descriptive elements specific to digital exhibitions, grouped into seven semantic sections derived from existing standards.

The seven sections, including the elements, were then packaged together in a wrapper called *Digital Exhibitions Metadata Elements Set*, whose acronym, DEMES, is used as a namespace. The list of elements is available online at the following URL: <http://demes.digitalexhibitions.org/>.

The sections and the descriptive elements are as follows:

1. Identification	<ul style="list-style-type: none"> - Identifier - Title
2. Description	<ul style="list-style-type: none"> - Description - Language - Type - Date - Item type - Item format - Target audience - Accrual policy - Provenance
3. Subject	<ul style="list-style-type: none"> - Subject - Spatial coverage - Temporal coverage
4. Responsibility	<ul style="list-style-type: none"> - Curator - Contributor - Publisher
5. Access	<ul style="list-style-type: none"> - Is accessed via - Requires
6. Rights	<ul style="list-style-type: none"> - Rights - Rights holders
7. Relations	<ul style="list-style-type: none"> - Super collection - Sub collection - Relation - Associated physical exhibition - Associated digital exhibition - Associated digital collection - Associated event - Catalogue or index - Associated publication

The list and structured description of the 30 individual elements in alphabetical order is provided below. For each element, name, definition and main intended use is presented, together with a standard reference, if available. For standard references the following acronyms are used:

- dc = Dublin Core Metadata Element Set version 1.1
<http://dublincore.org/documents/dces/>
- dcterms= DCMI Metadata terms
<http://dublincore.org/documents/dcmi-terms/>
- cld = Dublin Core Collection Description Terms
<http://dublincore.org/groups/collections/collection-terms/2007-03-09/>

Practical hints on the usage of the elements in the framework of the description of a digital exhibition are provided, as is the indication if the element is to be considered required and, if not, recommended or optional and if it should be repeatable or not. It is also made explicit if any attributes are required.

Standard terminologies and encoding schemes are not included, as such choices will be made according to the needs of each individual cataloguing initiative.

ACCRUAL POLICY

Name	accrualPolicy
Reference	dcterms:accrualPolicy
Definition	A policy governing the addition of items to the digital exhibition.
Use	The accrual of a digital exhibition could be closed, meaning the digital exhibition content is no more incremented, active (items are actively sought for addition), passive (items are added by external agents), or partial (only parts of the exhibition are incremented) (reference: Dublin Core Collection Description Accrual Policy Vocabulary http://dublincore.org/groups/collections/accrual-policy/2007-03-09/). This element is particularly relevant for those exhibitions whose content is incremented through social participation.
Repeatable	No
Required	No
Recommended or Optional	Optional

ASSOCIATED DIGITAL COLLECTION

Name	associatedDigitalCollection
Reference	cld:associatedCollection
Definition	Use this element to enter information on a digital collection whose objects are featured by the described digital exhibition. Please include the collection identifier, if available.
Use	Name and/or URI/URL of the digital collection.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

ASSOCIATED DIGITAL EXHIBITION

Name	associatedDigitalExhibition
Reference	cld:associatedCollection
Definition	Use to indicate an exhibition or collection in any way related to the digital exhibition (e.g. semantically).
Use	Record the ID or name of the associated digital exhibition. Please do not use this field for hierarchical association (described through Sub- and Super-collection) and versioning (described through Relation).
Repeatable	Yes
Required	No
Recommended or Optional	Optional

ASSOCIATED EVENT

Name	associatedEvent
Reference	cld:associatedCollection
Definition	Use to indicate the relation to an event involving the digital exhibition (for example, the opening ceremony).
Use	Briefly describe the event including name, location and date.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

ASSOCIATED PHYSICAL EXHIBITION

Name	associatedPhysicalExhibition
Reference	cld:associatedCollection
Definition	Use to indicate the relation to a physical exhibition reproduced, fully or in part, by the digital one.
Use	Report the name of the physical exhibition.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

ASSOCIATED PUBLICATION

Name	associatedPublication
Reference	dcterms:isReferencedBy
Definition	Description of any publication, online or offline, which points to or is based on the described digital exhibition.
Use	Bibliographic description and/or URI/URL or other identifier of the publication.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

CATALOGUE OR INDEX

Name	catalogueOrIndex
Reference	cld:catalogueOrIndex
Definition	Reference to the online or offline catalogue of the items included in the digital exhibition.
Use	Name and/or URI/URL or other identifier of the catalogue or index.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

CONTRIBUTOR

Name	contributor
Reference	dc:contributor
Definition	A person or organisation contributing to the conception and development of the digital exhibition.
Use	Record the name of the person or organisation.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

CURATOR

Name	curator
Reference	dc:creator
Definition	The intellectually responsible, the person or persons who outlined the concept for the exhibition and curated its development.
Use	Name of the person or persons. If no personal name is available, consider recording the name of a responsible organisation, if relevant.
Repeatable	Yes
Required	No
Recommended or Optional	Recommended

DATE

Name	dateCreated
Reference	dcterms:created
Definition	Date of creation of the digital exhibition.
Use	The date of creation of the exhibition should correspond to the moment when the exhibition was made available to the public, rather than to the moment when the concept was outlined.
Repeatable	No
Required	Yes
Recommended or Optional	—

DESCRIPTION

Name	description
Reference	dcterms:abstract
Definition	A free-text summary description of the digital exhibition.
Use	It is possible to provide the description in more than one language. If the digital exhibition is available in more than one different version (for example, an app release different from the Web version, or linguistic versions that differ for content) it is recommended to make a different descriptive record for each version and to relate the various versions through the element “Relation”.
Attributes	xml:lang
Repeatable	Yes
Required	Yes
Recommended or Optional	—

IDENTIFIER

Name	identifier
Reference	dc:identifier
Definition	A unique identifier for the digital exhibition
Use	The identifier can be local or expressed through a standard such as an ISCI, a DOI, a PURL etc. Please specify also the type of the identifier.
Repeatable	No
Required	No
Recommended or Optional	Recommended

IS ACCESSED VIA

Name	isAccessedVia
Reference	cld:isAccessedVia
Definition	A product or service that provides access to the digital exhibition.
Use	For online exhibitions: the URI/URL where the exhibition can be accessed and explored. Please specify the last check date of the url. For exhibitions available as DVD, CD or similar, please mention the standard number identifying the product or, if this is not available, briefly describe the product.
Repeatable	Yes
Required	Yes
Recommended or Optional	—

ITEM FORMAT

Name	itemFormat
Reference	cld:itemFormat
Definition	Digital format of the items included in the digital exhibition.
Use	Mention the acronym identifying the format (for example: JPEG, PDF...). Please repeat for each relevant format.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

ITEMTYPE

Name	itemType
Reference	cld:itemType
Definition	Type of the items included in the digital exhibition.
Use	List the kind of items included in the digital exhibition (for example: text, image, video, audio, application, model ...).
Repeatable	Yes
Required	No
Recommended or Optional	Optional

LANGUAGE

Name	language
Reference	dc:language
Definition	The language of the content of the digital exhibition.
Use	Repeat the element for each featured language.
Repeatable	Yes
Required	Yes
Recommended or Optional	—

PROVENANCE

Name	provenance
Reference	dcterms:provenance
Definition	A statement of any changes in ownership and custody of the digital exhibition since its creation. Digital exhibitions could move, for example, across websites or digital services. This information is significant for the authenticity, integrity and interpretation of the digital exhibition.
Use	Please record here all historical information that is relevant for authenticity, integrity and interpretation of the digital exhibition.
Repeatable	No
Required	No
Recommended or Optional	Optional

PUBLISHER

Name	publisher
Reference	dcterms:publisher
Definition	The organisation or institution that commissioned or published the digital exhibition.
Use	Record the original name of the organisation, or organisations, involved.
Repeatable	Yes
Required	Yes
Recommended or Optional	—

RELATION

Name	relation
Reference	dcterms:replaces; dcterms:isReplacedBy
Definition	This element enables relating different versions of the same exhibition: e.g. app vs Web version, different linguistic versions that do not mirror each other, versions adapted for a specific public (e.g. school children), etc.
Use	ID or name of the related digital exhibition.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

REQUIRES

Name	requires
Reference	dcterm:requires
Definition	Software (plug-ins, operating system, etc.) needed in order to access the digital exhibition correctly.
Use	Name of required software.
Repeatable	Yes
Required	No
Recommended or Optional	Recommended

RIGHTS

Name	rights
Reference	dc:rights
Definition	A statement of any rights held in/over the digital exhibition.
Use	Use to mention any specific licence or to give a statement clarifying that the content is fully copyrighted or in the public domain.
Repeatable	No
Required	No
Recommended or Optional	Recommended

RIGHTS HOLDER

Name	rightsHolder
Reference	dc:rights
Definition	Person or institution holding intellectual property rights vested in the digital exhibition.
Use	Name and contact of the rights holder.
Repeatable	No
Required	No
Recommended or Optional	Recommended

SPATIAL COVERAGE

Name	spatialCoverage
Reference	dcterms:spatial
Definition	The spatial (geographic, topographic etc.) coverage of the digital exhibition's content (e.g.: Japan for a digital exhibition of Japanese lacks).
Use	Please repeat the element for each relevant spatial entity.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

SUB-COLLECTION

Name	sub-collection
Reference	dcterms:hasPart
Definition	Digital exhibitions that are part of the digital exhibition described.
Use	ID or name of the sub-collection (exhibition part of the described exhibition).
Repeatable	Yes
Required	No
Recommended or Optional	Optional

SUBJECT

Name	subject
Reference	dc:subject
Definition	Subject headings and keywords relevant to index the content of the digital exhibition.
Use	Please repeat the element for each relevant subject or keyword.
Attributes	xml:lang
Repeatable	Yes
Required	No
Recommended or Optional	Recommended

SUPER-COLLECTION

Name	super-collection
Reference	dcterms:isPartOf
Definition	An exhibition or collection the described digital exhibition is part of.
Use	ID or name of the super-collection (exhibition including the described digital exhibition).
Repeatable	Yes
Required	No
Recommended or Optional	Optional

TARGET AUDIENCE

Name	audience
Reference	dcterms:audience
Definition	Target public of the exhibition.
Use	For example: General public, Professionals, Researchers, School children, High school students, etc.
Repeatable	Yes
Required	No
Recommended or Optional	Recommended

TEMPORAL COVERAGE

Name	temporalCoverage
Reference	dcterms:temporal
Definition	The time span covered by the content of the exhibition.
Use	A date, or a term or phrase. Please repeat the element for each temporal entity.
Repeatable	Yes
Required	No
Recommended or Optional	Optional

TITLE

Name	title
Reference	dc:title
Definition	The original title of the digital exhibition.
Use	<p>If the digital exhibition has more than one original title (for example because the title is provided in more than one language) please repeat the element for each original title. The language of the title shall be specified in any case.</p> <p>If no English title is available, it is recommended to provide a courtesy translation in English.</p>
Attributes	xml:lang
Repeatable	Yes
Required	Yes
Recommended or Optional	—

Name	type
Reference	dc:type
Definition	The nature or genre of the digital exhibition.
Use	For an effective use of this element, a taxonomy or other standard terminology listing the main types of digital exhibitions considered is recommended.
Attributes	xml:lang
Repeatable	No
Required	Yes
Recommended or Optional	Optional

4. References

Collection Description standards

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<http://dublincore.org/groups/collections/collection-application-profile/>; summary at:
<http://dublincore.org/groups/collections/collection-ap-summary/>

IMLS DCC Collection Description Metadata Schema (2008)

International Standard Collection Identifier - ISCI (ISO 27730:2012)
http://www.iso.org/iso/catalogue_detail.htm?csnumber=44293

MICHAEL Data Model (2005)
<http://www.michael-culture.org/about/documentation.html>

NISO Collection Description Specification (2006)
http://www.niso.org/apps/group_public/project/details.php?project_id=39
http://www.niso.org/apps/group_public/download.php/6479/Collection%20Description%20Specification.pdf

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<http://hdl.handle.net/2142/45860>

in the same series

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DIGITISATION:

STANDARDS LANDSCAPE

FOR EUROPEAN MUSEUMS,

ARCHIVES, LIBRARIES



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PERSISTENT

IDENTIFIERS (PIDs):


RECOMMENDATIONS

FOR INSTITUTIONS




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DIGITAL CULTURAL CONTENT:


GUIDELINES FOR

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LIDO
Lightweight Information Describing Objects

LIGHTWEIGHT INFORMATION

DESCRIBING OBJECTS (LIDO):

THE INTERNATIONAL HARVESTING

STANDARD FOR MUSEUMS



MINISTERO
DEI BENI E
DE ATTIVITA'
CULTURALI



GEOCODED

DIGITAL CULTURAL

CONTENT



YOUR TERMINOLOGY

AS A PART OF THE SEMANTIC WEB

RECOMMENDATIONS

FOR DESIGN AND MANAGEMENT



DIGITAL STORYTELLING

AND CULTURAL HERITAGE:

STAKES AND OPPORTUNITIES



IMPLEMENTING

LIDO



A SET OF 30 DESCRIPTIVE ELEMENTS SPECIFIC TO DIGITAL EXHIBITIONS,
GROUPED INTO SEVEN SEMANTIC SECTIONS BASED ON EXISTING STANDARDS.
THE SEVEN SECTIONS, INCLUDING THE ELEMENTS, ARE PACKAGED TOGETHER
IN A WRAPPER CALLED DIGITAL EXHIBITION METADATA ELEMENTS SET (DEMES).



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