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sustainability consulting + software

UNEP Shonan Guidance Principles put into practice

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UNEP Shonan Guidance Principles put into practice

The goal of finding, evaluating and generating consistent LCA Datasets

1 Motivation, the Shonan Guidance Workshop

2 UNEP/SETAC project: Shonan Database Conformance

3 An overview over Shonan Guidance Principles Conformance Criteria

4 What has been achieved? What's next?

1 Motivation

The Shonan Guidance Workshop

The Shonan Guidance Workshop

About 50 recognised LCA experts came together in Shonan, Japan, for about one week in early 2011 in a SETAC "Pellston" workshop, to seek agreement on how to build and maintain LCA databases.

Results are summarised in a 160 page document.

Content: Database management, Unit Process, Aggregated Process, Data Documentation and Management, Review, Cooperation, ...

The Shonan Guidance Workshop

Motivation

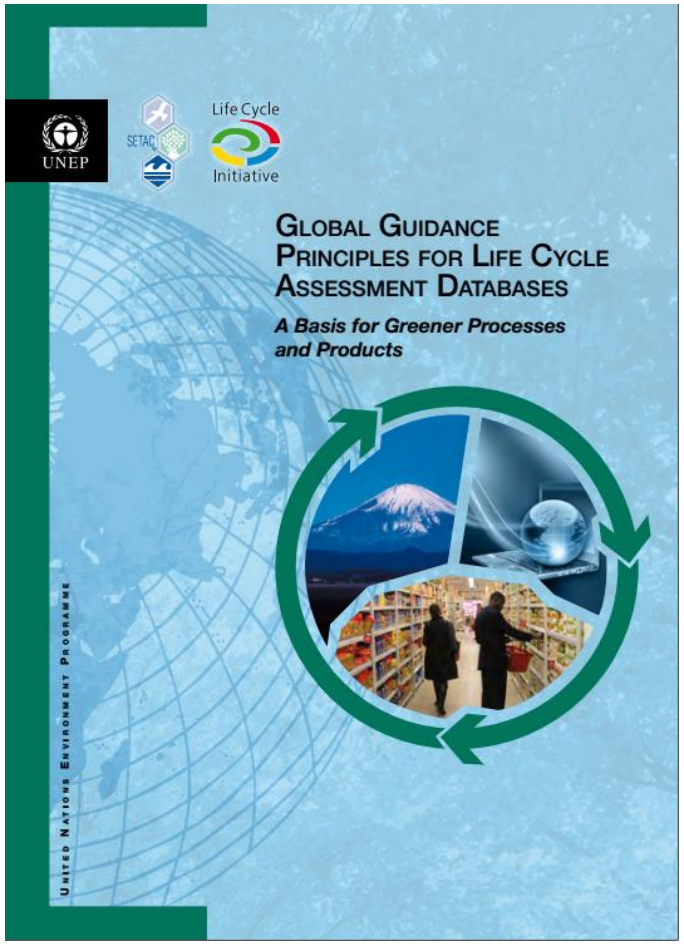
Many different LCA databases exist, more are emerging;

Databases are created and maintained with different concepts, following different principles

→ datasets in databases “do not fit together”; this is not optimal and should be changed

→ Is there a common bases on how to create, maintain LCA databases; is there an identifiable good practice?

The Shonan Guidance Workshop



http://www.unep.org/pdf/Global-Guidance-Principles-for-LCA.pdf

The Shonan Guidance Workshop
Application

Ongoing:
GGP (= Global Guidance Principles) trainings (Chile, China, [...], India – Sept 28) to explain and train the ideas and concepts developed.

New:
Develop and apply criteria for "GGP conformance" for databases

→ UNEP/SETAC project (GreenDelta, Uni Bordeaux)

2 UNEP/SETAC project: Shonan Database Conformance

Shonan Database Conformance Project

Several tasks; including:

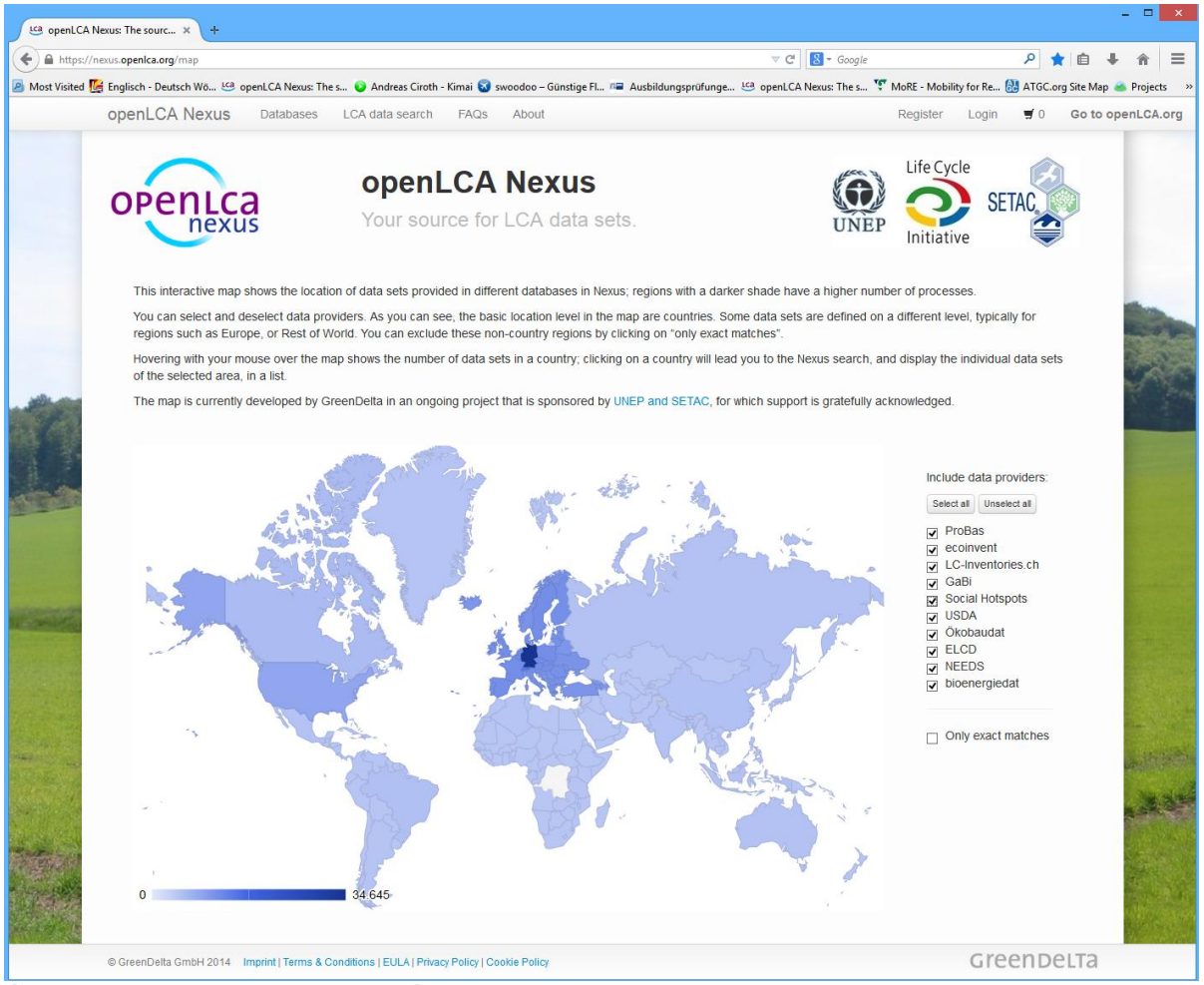
- Creating an interactive map to visualise databases worldwide, with properties
- Development of conformance criteria
- Applying the criteria to existing databases

Other parts:

- Extending and strengthening a network of existing databases

Shonan Database Conformance Project

interactive map to visualise databases worldwide



https://nexus.openlca.org/map

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Shonan Database Conformance Project

Development of conformance criteria

Main aspect:

"extract" and coordinate criteria from the Shonan Guidance Principles document that can be applied for databases and possibly also for datasets in databases;

→ Condense the information; make it visible (e.g., for datasets available in a country, on a map)

Shonan Database Conformance Project

Applying the conformance criteria

Application of the criteria in a coordinated manner;

not: experts assess a database which then scores good or not so good;

rather: database managers and operators perform the assessment, in a transparent manner; the assessment result is cross-checked

3 An overview over Shonan Guidance Principles Conformance Criteria

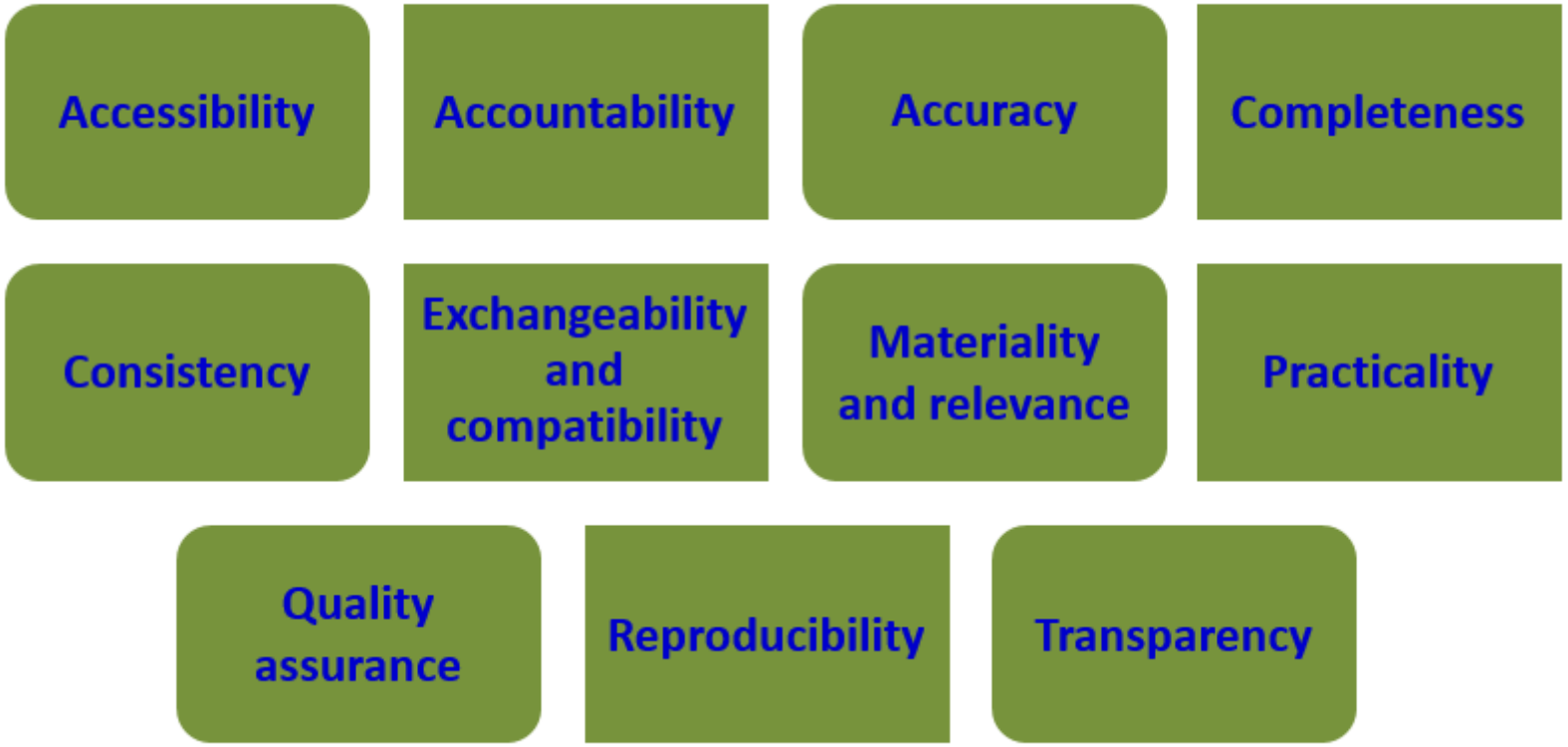
Shonan Database Criteria

Criteria / desireable features mentioned in the Shonan Report

- Accessibility
- Accountability
- Accuracy
- Completeness
- Consistency
- Exchangeability and compatibility
- Materiality and relevance
- Practicality
- Quality assurance
- Reproducibility
- Transparency

Shonan Database Criteria

Criteria / desireable features mentioned in the Shonan Report



Scope not clear (database / dataset); only mentioned in the introduction; no distinction between nice to have / must criteria

Shonan Database Criteria

Draft Proposal: Criteria for the criteria

The criteria need to be "3C":

- Comprehensive (capture spirit and content of Shonan Guidance Text as much as possible)
- Clear (easy to understand, as short as possible, no double-counting and overlaps)
- Concrete (easy to measure and process)

Shonan Database Criteria

Draft Proposal: Principal structure

Criteria topic \ scope	A Database	B Unit Process Dataset	C Aggregated Process Dataset
1 Interoperability and Access	A1	B1	C1
2 Content & Content Quality	A2	B2	C2
3 Management	A3	B3	C3

Shonan Database Criteria

Draft Proposal: Criteria scores

Possible criteria values / scores:

- Yes/no
- Ordinal (i.e.: low, middle, high or similar, evaluated in points from 1..5, 1 very bad, 3 medium 5 very good)

Shonan Database Criteria

Draft Proposal: Criteria scores

Criteria values / scores relevance

- Most criteria are “evaluative”: a database needs to score above a threshold to be GGP conform
- Some criteria are “informative”: the score does not influence the GGP conformance; they do not have a threshold

Shonan Database Criteria, draft

scope	criterion	Shonan conformance threshold	unit	unit type
data set, unit process	data set goal and scope description available	yes	yes/no	Boolean
	sufficient data set documentation	4	1..5	ordinal
	data set quality assurance performed	4	1..5	ordinal
	uncertainties described	4	1..5	ordinal
	data set structure ISO compliant	yes	yes/no	Boolean
	product production volumes available		yes/no	Boolean
	technology level available		yes/no	Boolean
	process geolocation available		1..5	ordinal
	time reference available	yes	yes/no	ordinal
aggregated data set	data set goal and scope description available	yes	yes/no	Boolean
	sufficient data set documentation	4	1..5	ordinal
	aggregated data set quality assurance performed	4	1..5	ordinal
	uncertainties described	4	1..5	ordinal
	data set structure ISO compliant	yes	yes/no	Boolean
	product production volumes available		yes/no	Boolean
	technology level available		yes/no	Boolean
	process geolocation available		1..5	ordinal
	time reference available	yes	yes/no	ordinal
database	harmonised taxonomy	4	1..5	ordinal
	supported ISO 14048 compliant LCA data formats		1..5	ordinal
	database protocol available	yes	yes/no	Boolean
	data set inclusion prolicy available		yes/no	Boolean
	database goal and scope available		yes/no	Boolean
	LCIA method support		1..5	ordinal
	share of unit processes		1..5	ordinal

Shonan Database Criteria, draft

scope	**data set, unit process**
critierion	**process geolocation available**
scores	meaning: geolocation available
1 poor	not available
2 medium-poor	free text
3 medium	country code following ISO 3166-1 alpha-2 or ISO 3166-1 alpha-3
4 good	longitude latitude
5 very good	KML or GML Geocode
threshold	no
type of indicator	informative

4 What has been achieved and what's next

Shonan Guidance Principles Criteria - What has been achieved and what‘s next

Draft criteria are available, in-project

These criteria help to make the Shonan Global Guidance Principles more operational so that they can be applied on databases and datasets globally

This is one big step towards more interoperational databases

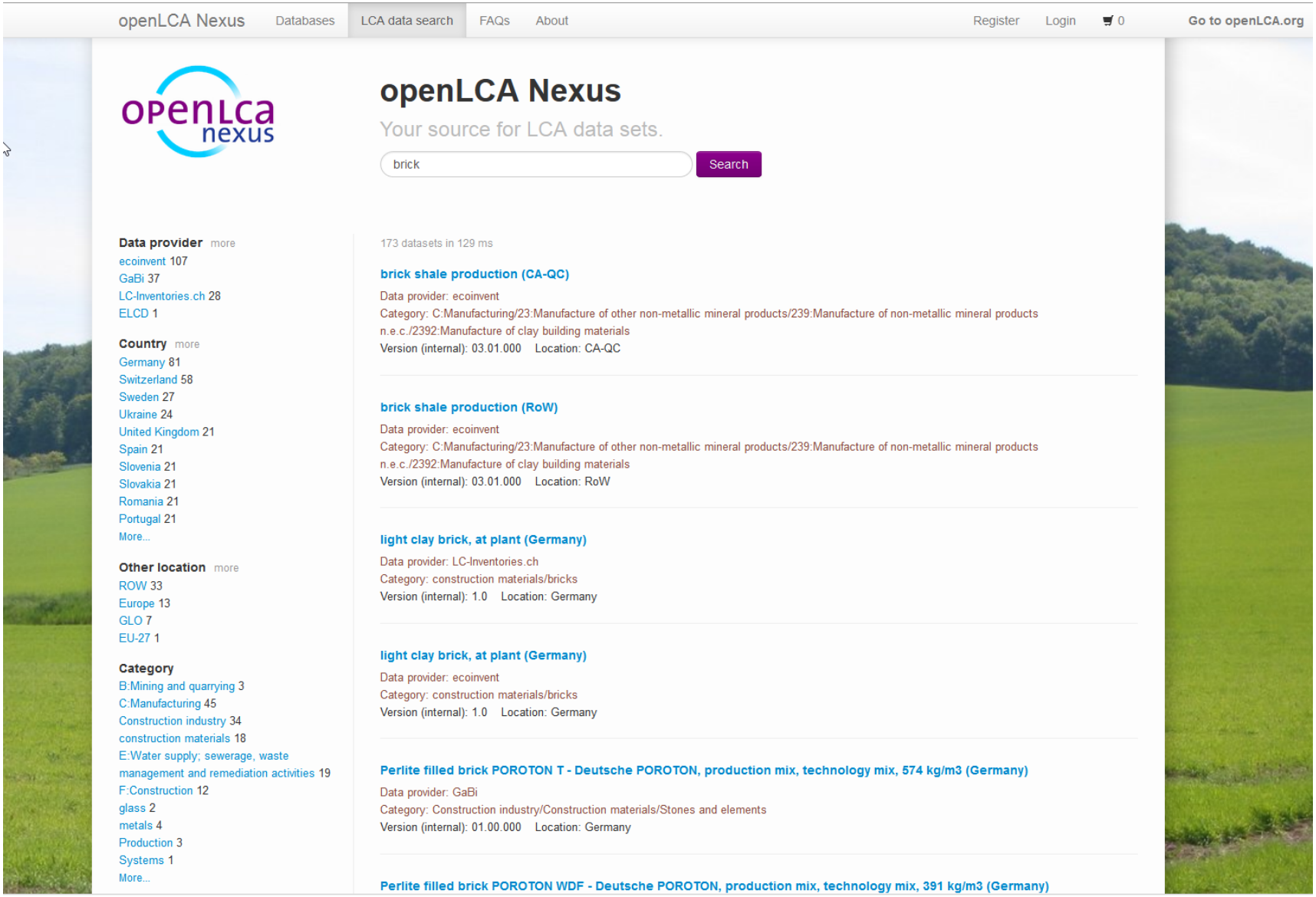
Shonan Guidance Principles Criteria - What has been achieved and what's next

Draft criteria are available, in-project

→ Upcoming: Coordination & review

→ Upcoming: Cooperation with database providers for completing the coordinated criteria

→ Upcoming: Publishing the criteria for databases, e.g. on openLCA nexus, where they can be used as filters


openLCA Nexus
Databases
LCA data search
FAQs
About
Register
Login
0
Go to openLCA.org
openLCA nexus
openLCA Nexus
Your source for LCA data sets.
brick
Search
Data provider more
ecoinvent 107
GaBi 37
LC-Inventories.ch 28
ELCD 1
Country more
Germany 81
Switzerland 58
Sweden 27
Ukraine 24
United Kingdom 21
Spain 21
Slovenia 21
Slovakia 21
Romania 21
Portugal 21
More...
Other location more
ROW 33
Europe 13
GLO 7
EU-27 1
Category
B:Mining and quarrying 3
C:Manufacturing 45
Construction industry 34
construction materials 18
E:Water supply; sewerage, waste management and remediation activities 19
F:Construction 12
glass 2
metals 4
Production 3
Systems 1
More...
173 datasets in 129 ms
brick shale production (CA-QC)
Data provider: ecoinvent
Category: C:Manufacturing/23:Manufacture of other non-metallic mineral products/239:Manufacture of non-metallic mineral products n.e.c./2392:Manufacture of clay building materials
Version (internal): 03.01.000 Location: CA-QC
brick shale production (RoW)
Data provider: ecoinvent
Category: C:Manufacturing/23:Manufacture of other non-metallic mineral products/239:Manufacture of non-metallic mineral products n.e.c./2392:Manufacture of clay building materials
Version (internal): 03.01.000 Location: RoW
light clay brick, at plant (Germany)
Data provider: LC-Inventories.ch
Category: construction materials/bricks
Version (internal): 1.0 Location: Germany
light clay brick, at plant (Germany)
Data provider: ecoinvent
Category: construction materials/bricks
Version (internal): 1.0 Location: Germany
Perlite filled brick POROTON T - Deutsche POROTON, production mix, technology mix, 574 kg/m3 (Germany)
Data provider: GaBi
Category: Construction industry/Construction materials/Stones and elements
Version (internal): 01.00.000 Location: Germany
Perlite filled brick POROTON WDF - Deutsche POROTON, production mix, technology mix, 391 kg/m3 (Germany)

Shonan Guidance Principles Criteria - What has been achieved and what‘s next

What’s next-next: Possibly and hopefully, further increased interoperability of LCA databases.

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Thank you very much.

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