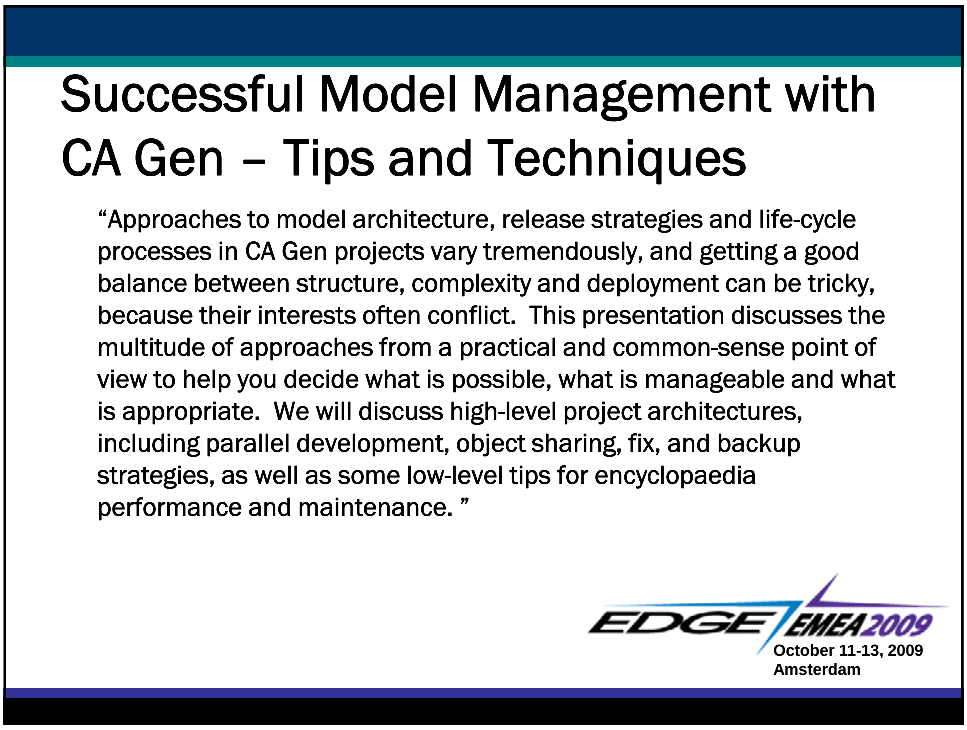
October 11-13, 2009
Amsterdam

Successful Model Management with CA Gen – Tips and Techniques

Session # X
October 28th, 2009 10:15 a.m. – 11:15 a.m.

John Gymer, IET



Successful Model Management with CA Gen – Tips and Techniques

"Approaches to model architecture, release strategies and life-cycle processes in CA Gen projects vary tremendously, and getting a good balance between structure, complexity and deployment can be tricky, because their interests often conflict. This presentation discusses the multitude of approaches from a practical and common-sense point of view to help you decide what is possible, what is manageable and what is appropriate. We will discuss high-level project architectures, including parallel development, object sharing, fix, and backup strategies, as well as some low-level tips for encyclopaedia performance and maintenance. "

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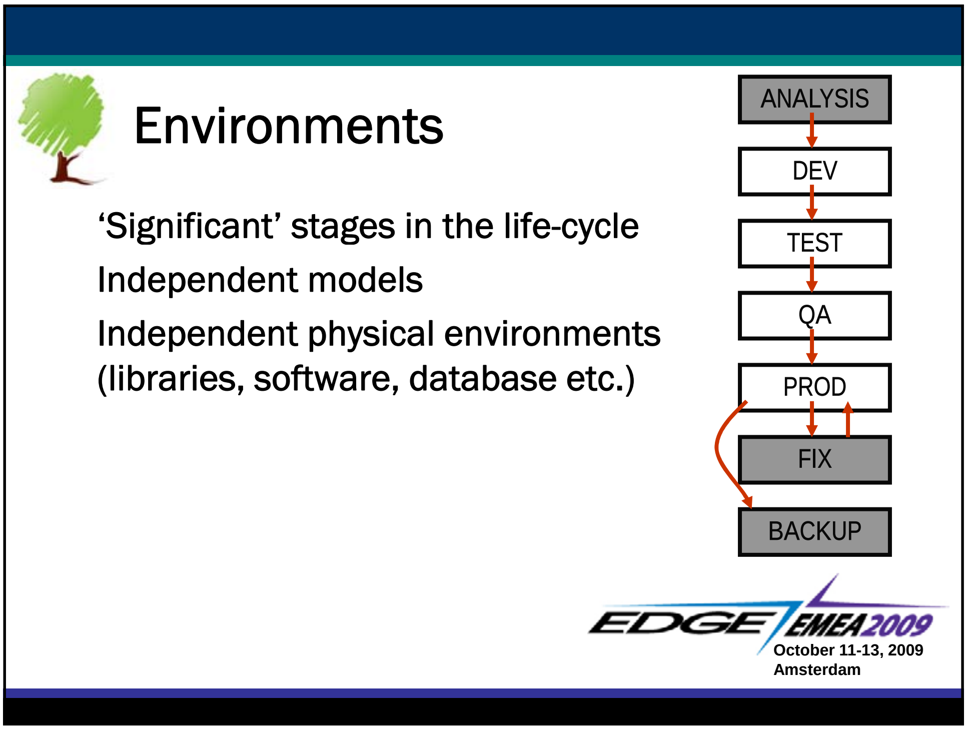

Environments

‘Significant’ stages in the life-cycle

Independent models

Independent physical environments (libraries, software, database etc.)

ANALYSIS

DEV

TEST

QA

PROD

FIX

BACKUP

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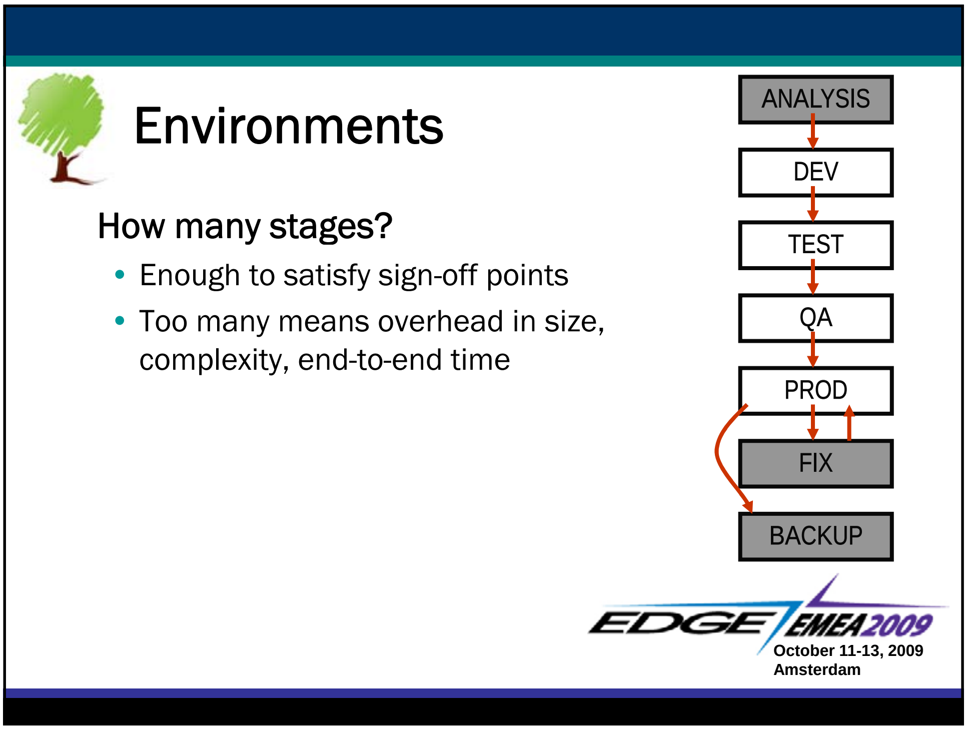

Environments

How many stages?

- Enough to satisfy sign-off points
- Too many means overhead in size, complexity, end-to-end time

ANALYSIS

DEV

TEST

QA

PROD

FIX

BACKUP

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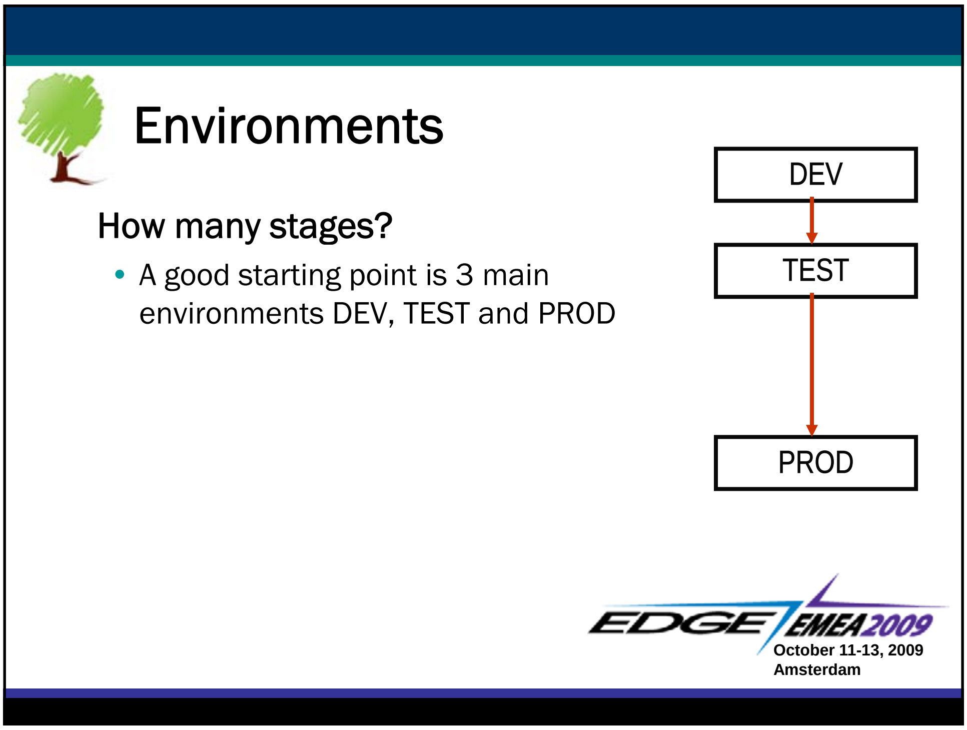

Environments

How many stages?

- A good starting point is 3 main environments DEV, TEST and PROD

DEV

TEST

PROD

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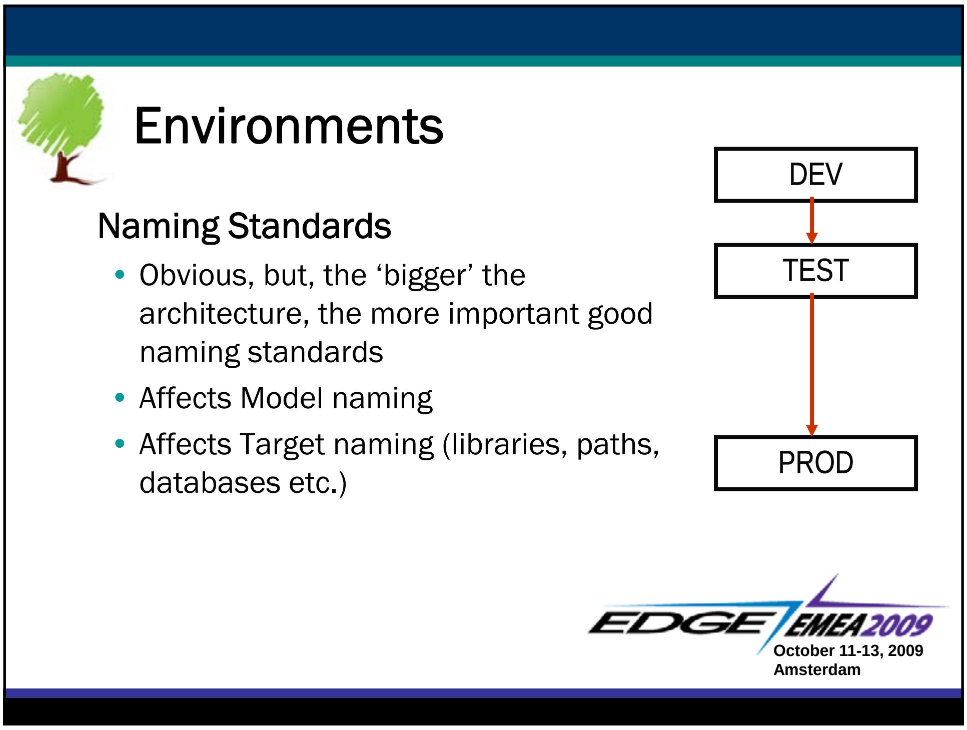

Environments

Naming Standards

- Obvious, but, the ‘bigger’ the architecture, the more important good naming standards
- Affects Model naming
- Affects Target naming (libraries, paths, databases etc.)

DEV

TEST

PROD

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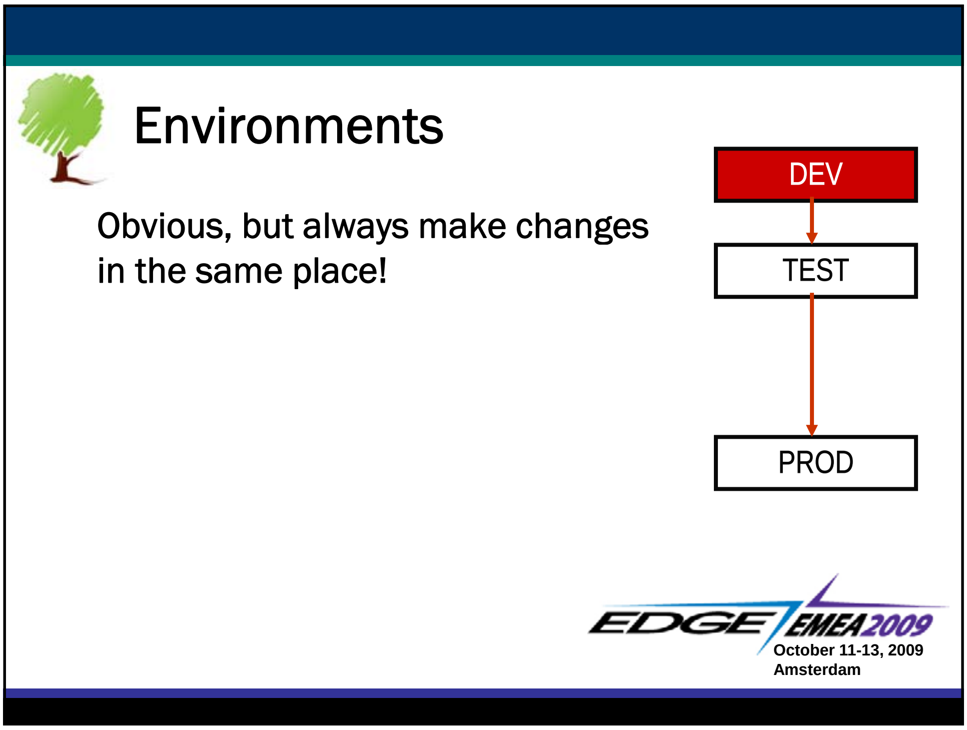

Environments

Obvious, but always make changes in the same place!

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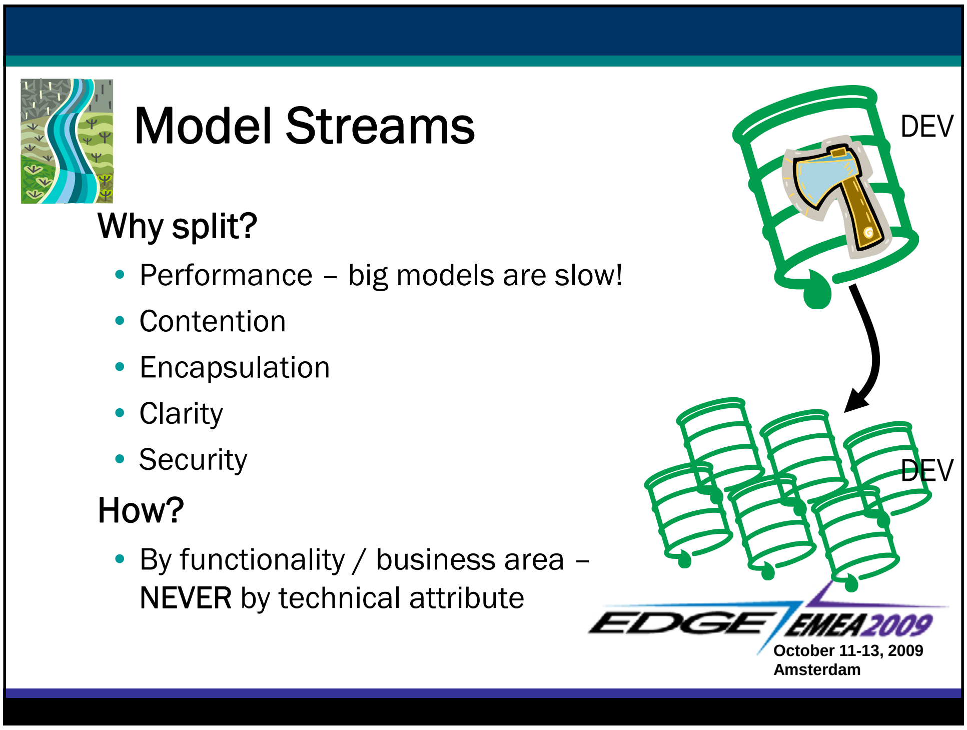

Model Streams

Why split?

- Performance – big models are slow!
- Contention
- Encapsulation
- Clarity
- Security

How?

- By functionality / business area – NEVER by technical attribute

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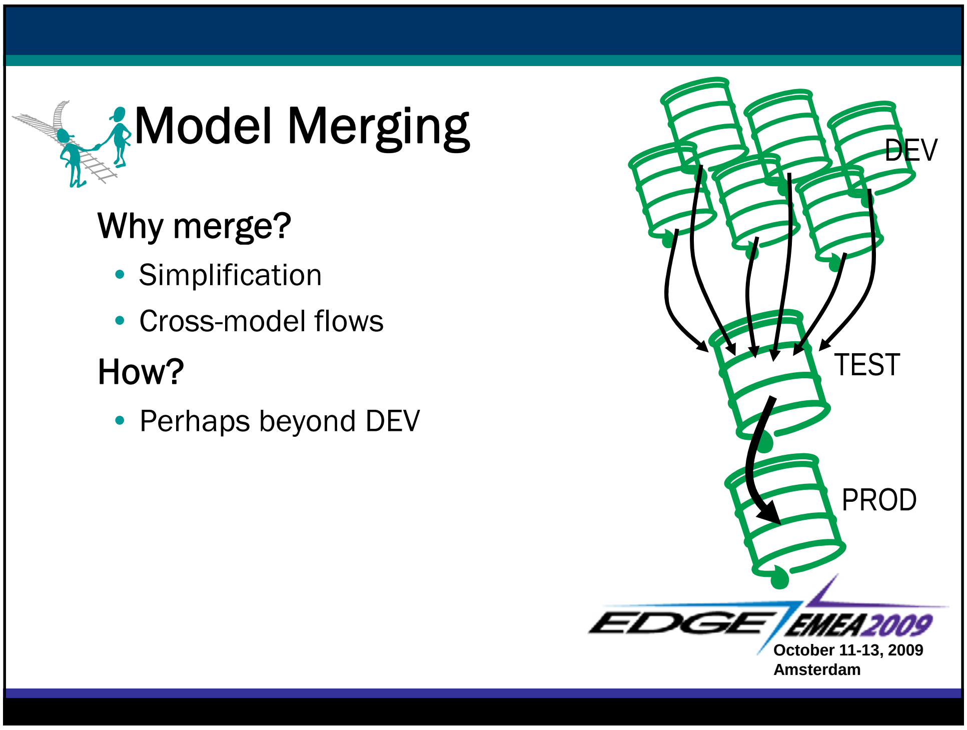

Model Merging

Why merge?

- Simplification
- Cross-model flows

How?

- Perhaps beyond DEV

DEV
TEST
PROD
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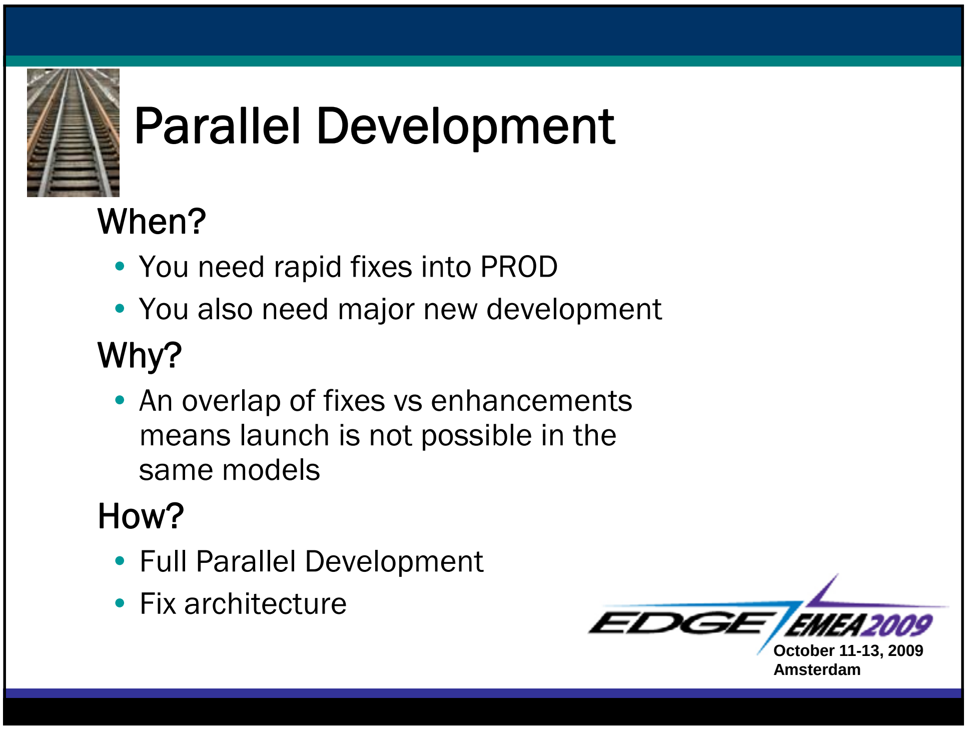

Parallel Development

When?

- You need rapid fixes into PROD
- You also need major new development

Why?

- An overlap of fixes vs enhancements means launch is not possible in the same models

How?

- Full Parallel Development
- Fix architecture

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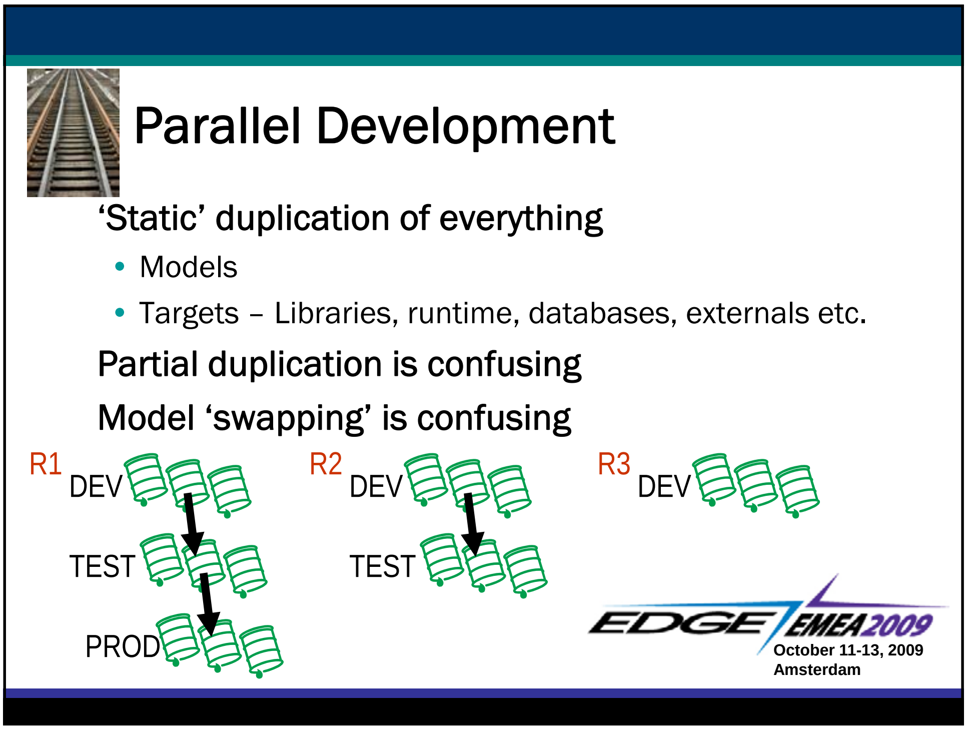

Parallel Development

'Static' duplication of everything

- Models
- Targets – Libraries, runtime, databases, externals etc.

Partial duplication is confusing

Model 'swapping' is confusing

R1 DEV

TEST

PROD

R2 DEV

TEST

R3 DEV

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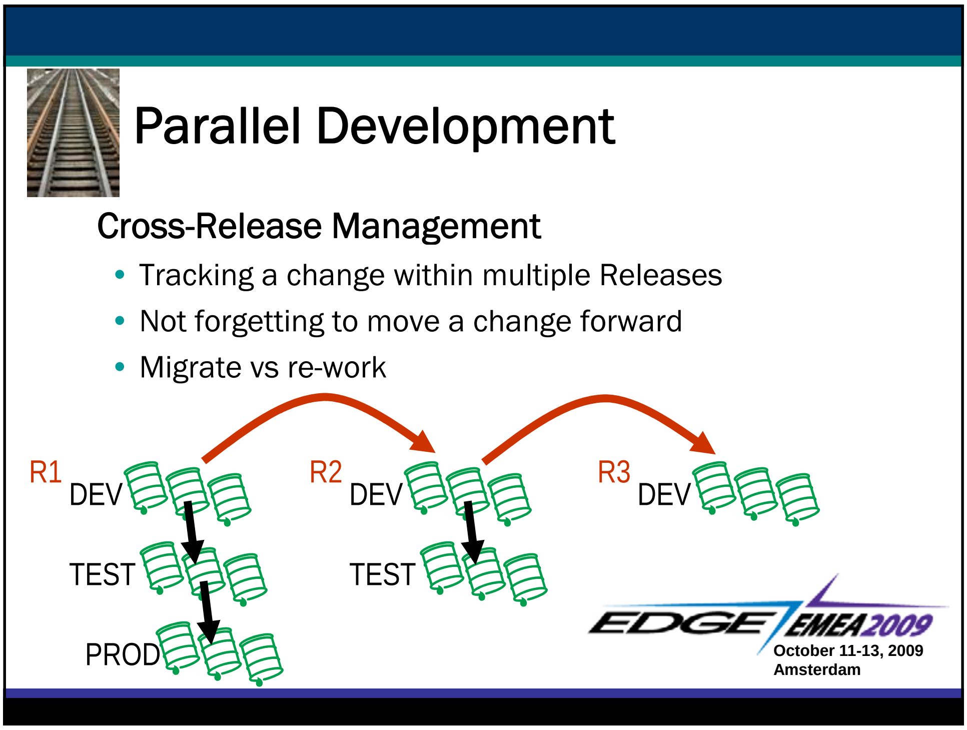

Parallel Development

Cross-Release Management

- Tracking a change within multiple Releases
- Not forgetting to move a change forward
- Migrate vs re-work

R1 DEV

TEST

PROD

R2 DEV

TEST

R3 DEV

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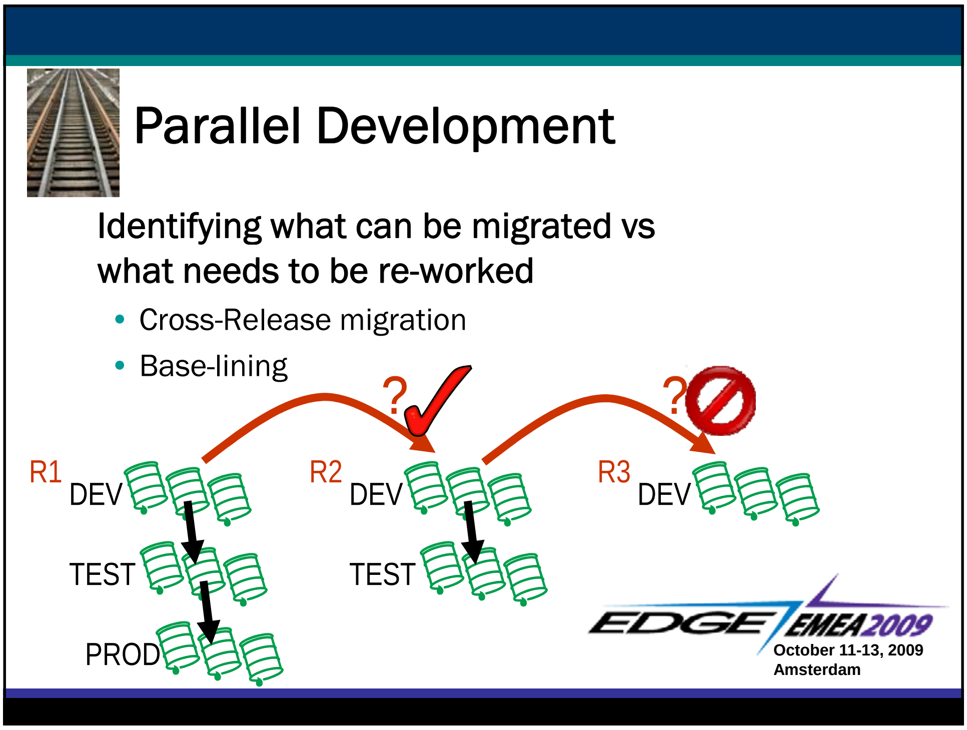

Parallel Development

Identifying what can be migrated vs what needs to be re-worked

- Cross-Release migration
- Base-lining

?
?
R1
DEV
TEST
PROD
R2
DEV
TEST
R3
DEV

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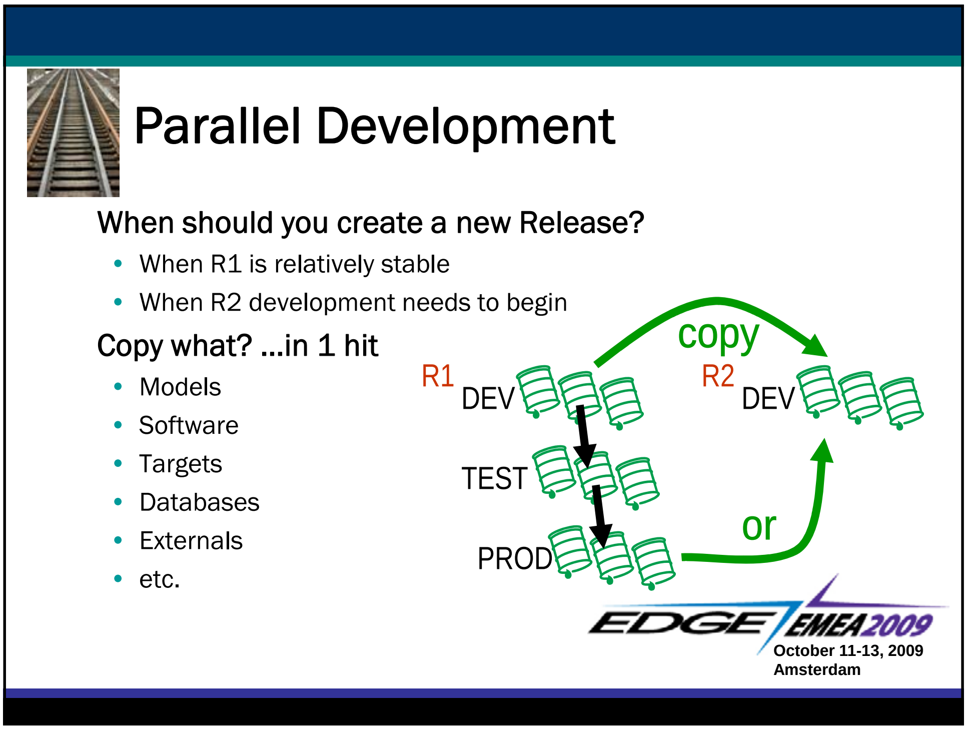

Parallel Development

When should you create a new Release?

- When R1 is relatively stable
- When R2 development needs to begin

Copy what? …in 1 hit

- Models
- Software
- Targets
- Databases
- Externals
- etc.

copy
R1
DEV
TEST
PROD
R2
DEV
or

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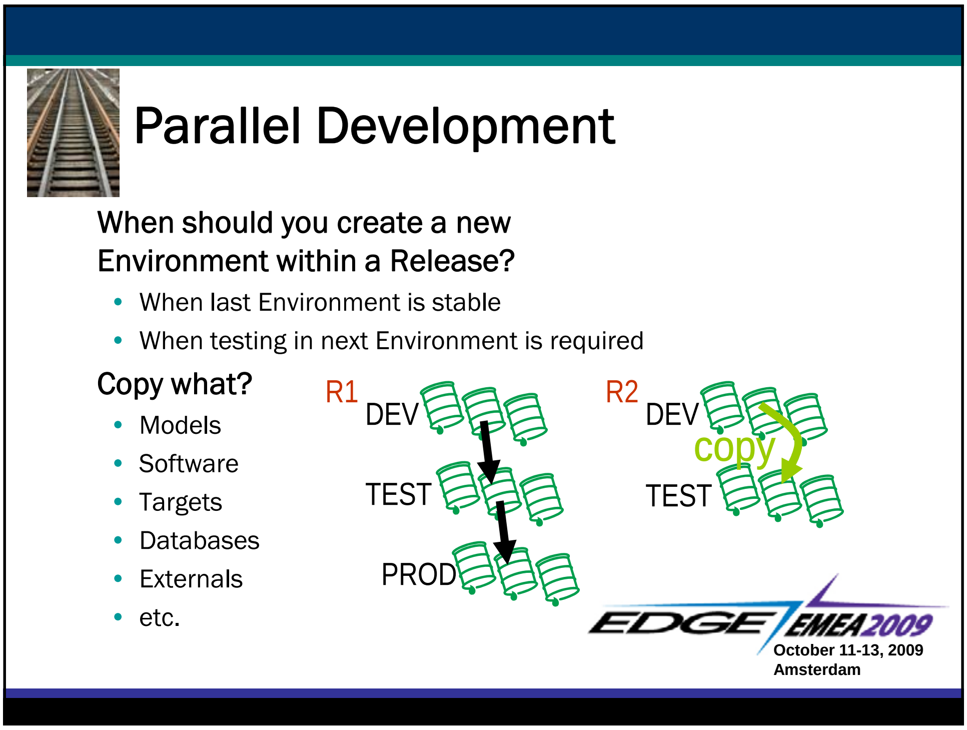

Parallel Development

When should you create a new Environment within a Release?

- When last Environment is stable
- When testing in next Environment is required

Copy what?

- Models
- Software
- Targets
- Databases
- Externals
- etc.

R1

DEV

TEST

PROD

R2

DEV

copy

TEST

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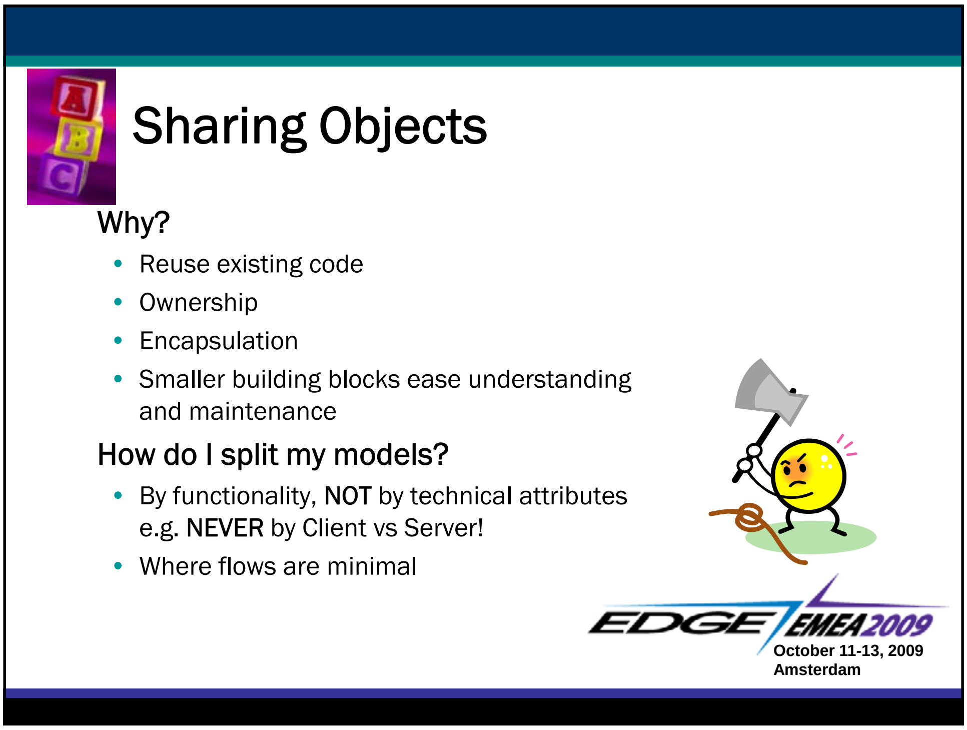

Sharing Objects

Why?

- Reuse existing code
- Ownership
- Encapsulation
- Smaller building blocks ease understanding and maintenance

How do I split my models?

- By functionality, **NOT** by technical attributes e.g. **NEVER** by Client vs Server!
- Where flows are minimal

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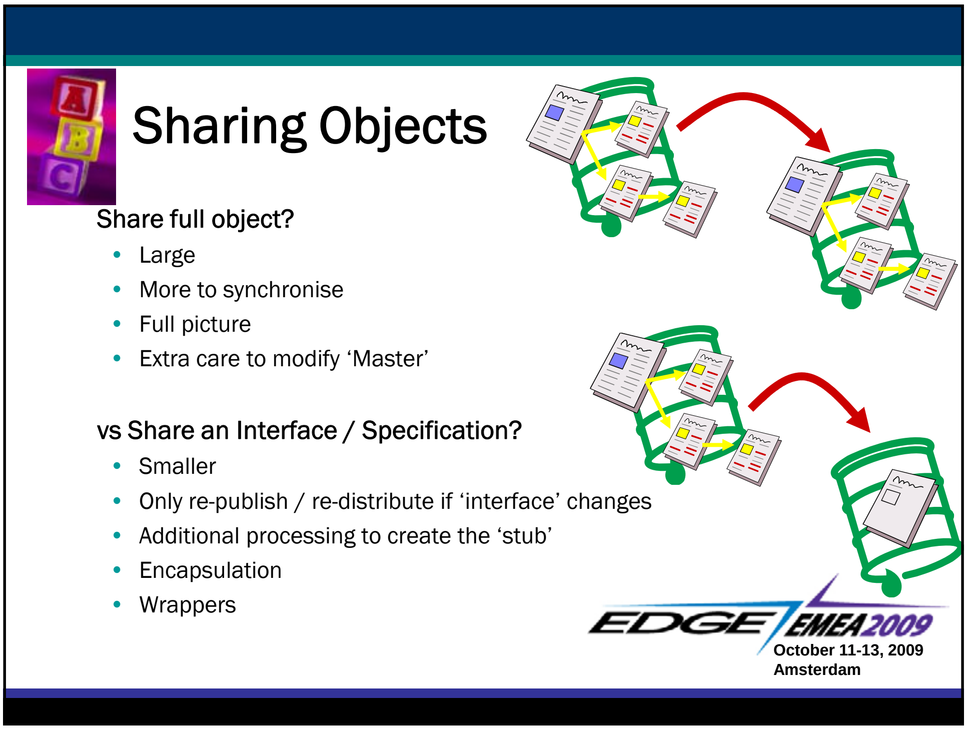

Sharing Objects

Share full object?

- Large
- More to synchronise
- Full picture
- Extra care to modify ‘Master’

vs Share an Interface / Specification?

- Smaller
- Only re-publish / re-distribute if ‘interface’ changes
- Additional processing to create the ‘stub’
- Encapsulation
- Wrappers

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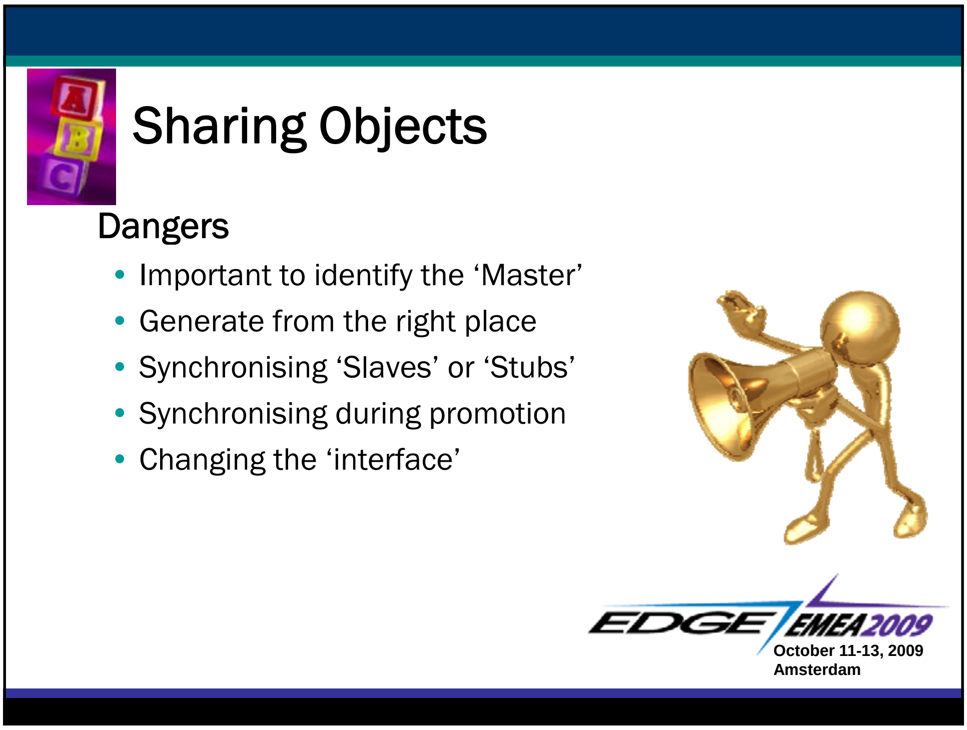

Sharing Objects

Dangers

- Important to identify the ‘Master’
- Generate from the right place
- Synchronising ‘Slaves’ or ‘Stubs’
- Synchronising during promotion
- Changing the ‘interface’

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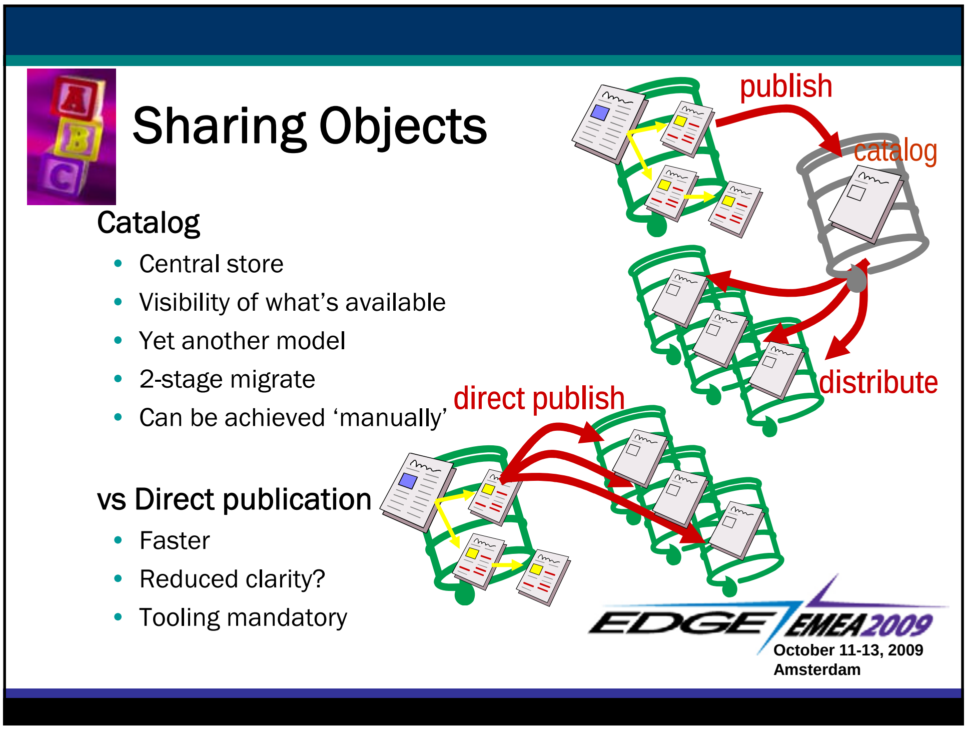

Sharing Objects

Catalog

- Central store
- Visibility of what's available
- Yet another model
- 2-stage migrate
- Can be achieved 'manually'

vs Direct publication

- Faster
- Reduced clarity?
- Tooling mandatory

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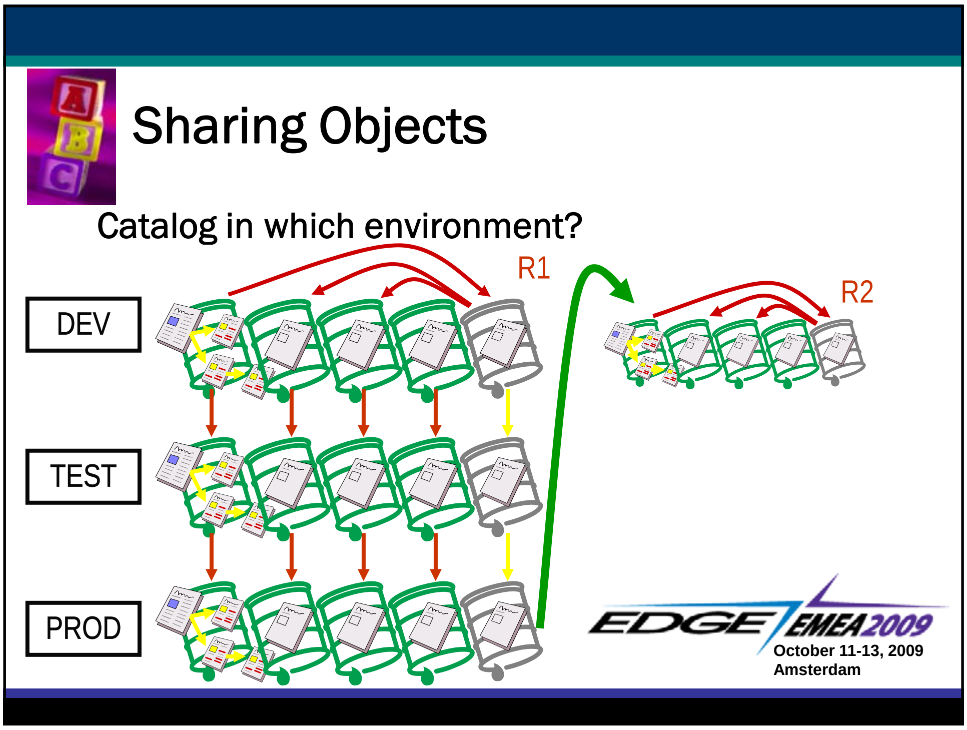

Sharing Objects

Catalog in which environment?

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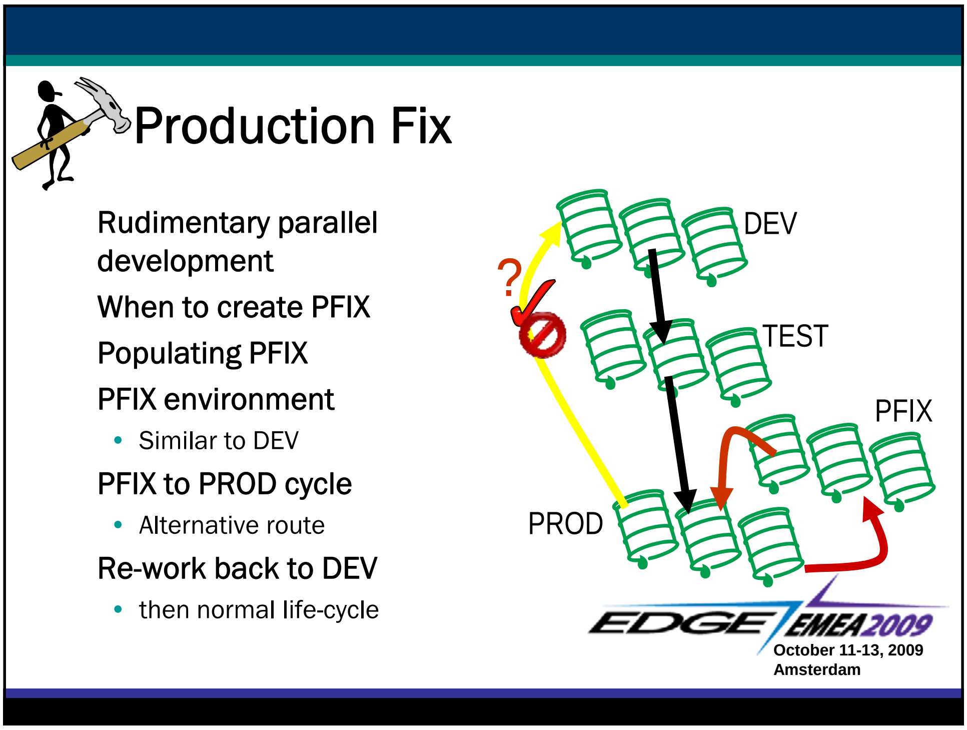

Production Fix

- Rudimentary parallel development
- When to create PFIX
- Populating PFIX
- PFIX environment
  - Similar to DEV
- PFIX to PROD cycle
  - Alternative route
- Re-work back to DEV
  - then normal life-cycle

DEV
TEST
PFIX
PROD
?

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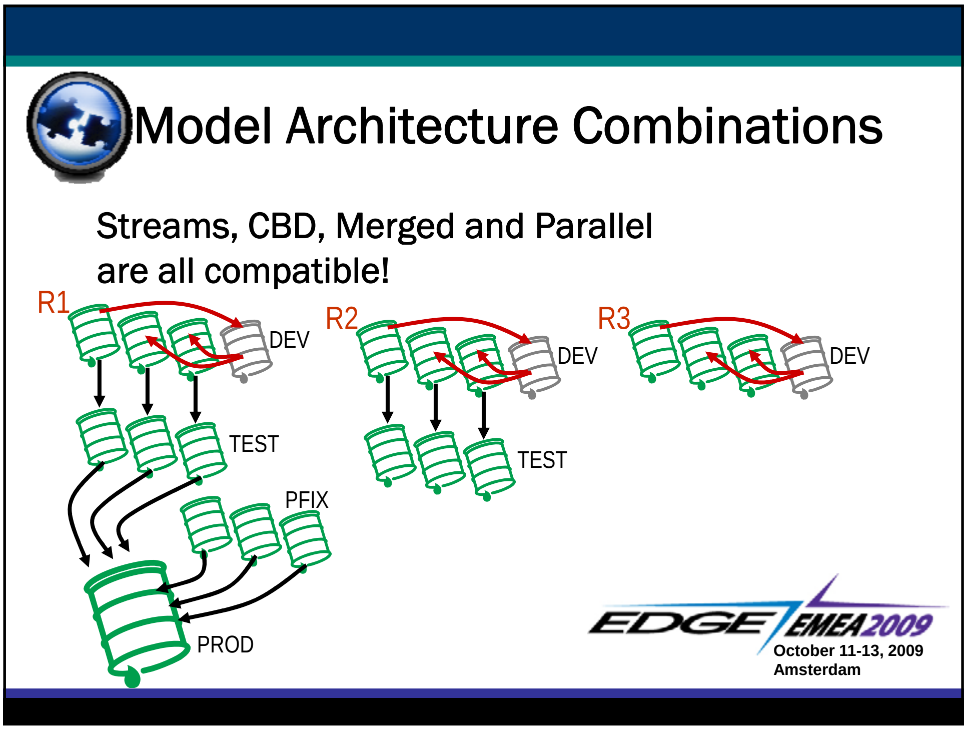

Model Architecture Combinations

Streams, CBD, Merged and Parallel are all compatible!

R1
DEV
TEST
PFIX
PROD
R2
DEV
TEST
R3
DEV

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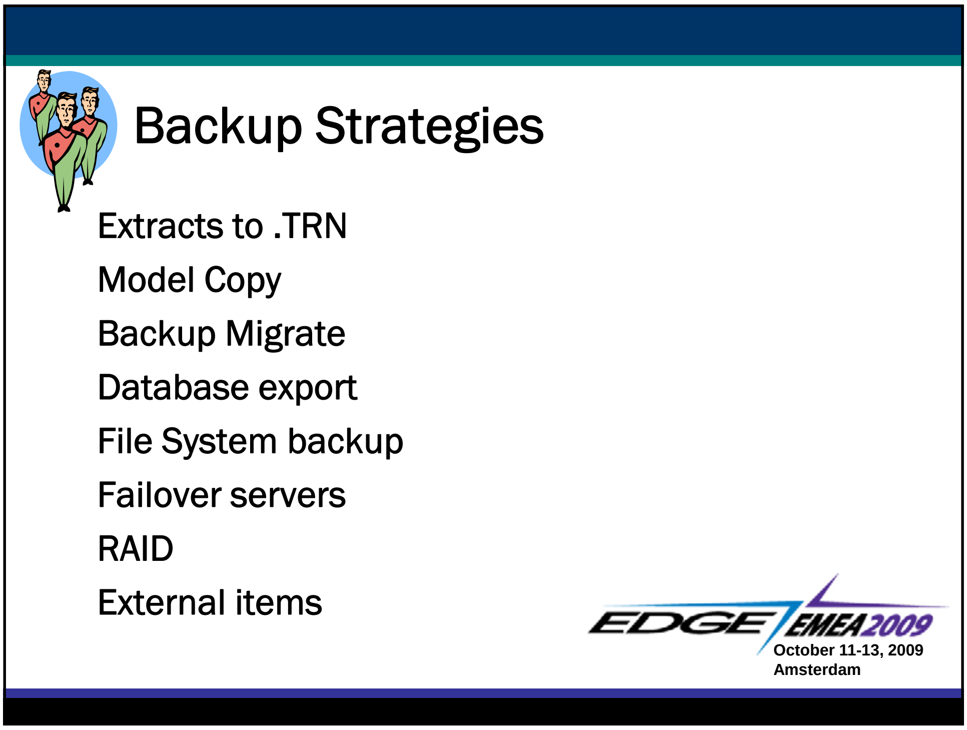

Backup Strategies

Extracts to .TRN

Model Copy

Backup Migrate

Database export

File System backup

Failover servers

RAID

External items

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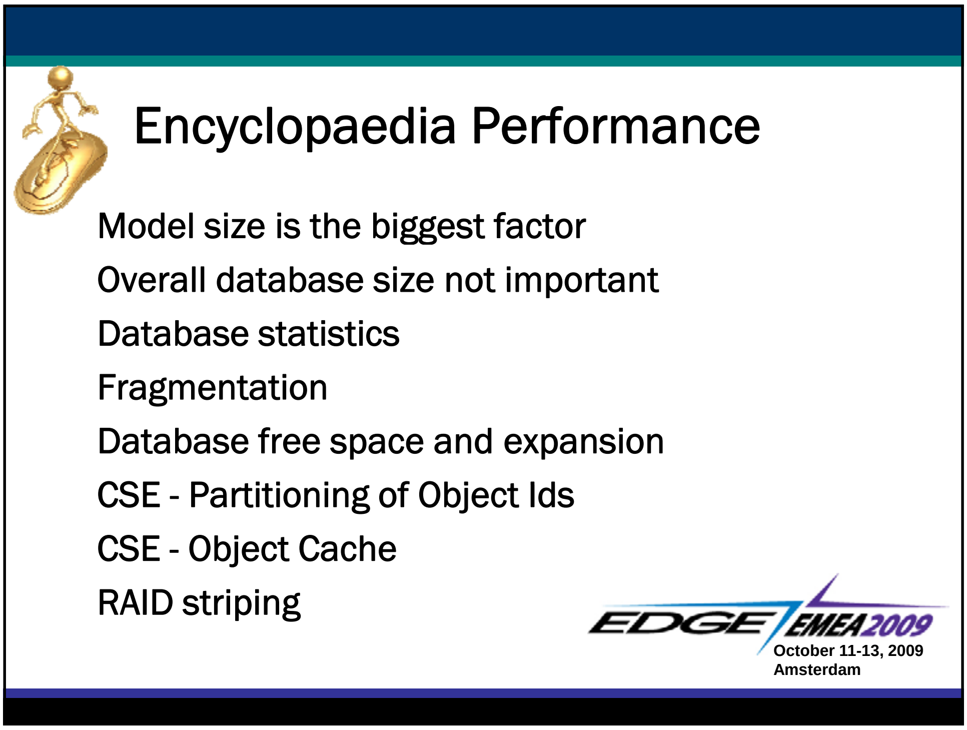

Encyclopaedia Performance

Model size is the biggest factor

Overall database size not important

Database statistics

Fragmentation

Database free space and expansion

CSE - Partitioning of Object Ids

CSE - Object Cache

RAID striping

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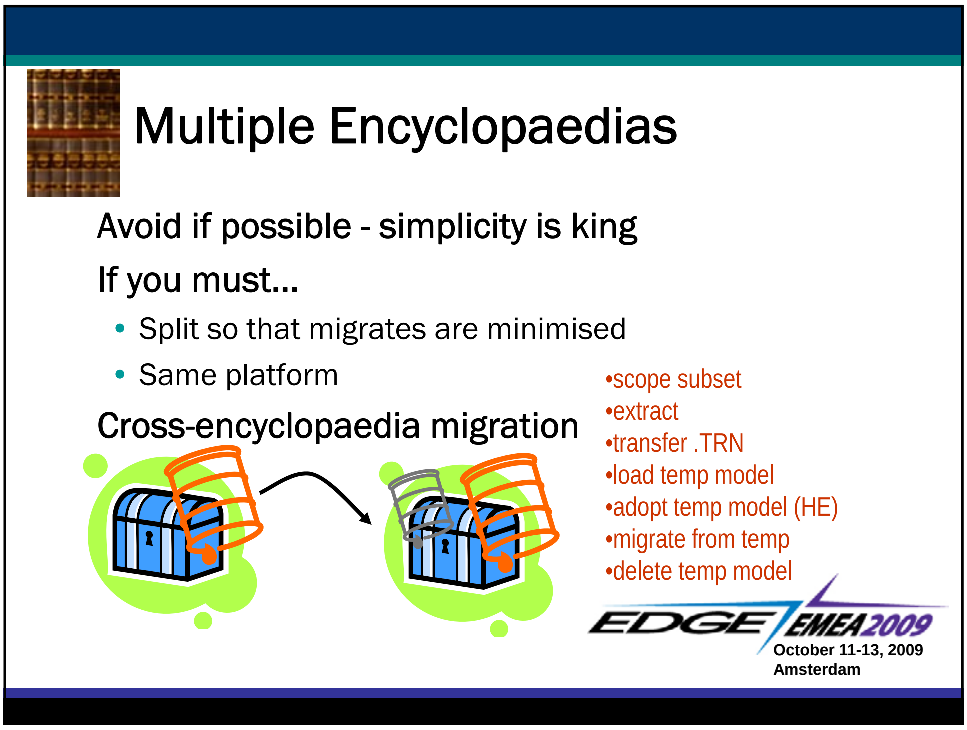

Multiple Encyclopaedias

Avoid if possible - simplicity is king

If you must…

- Split so that migrates are minimised
- Same platform

Cross-encyclopaedia migration

- scope subset
- extract
- transfer .TRN
- load temp model
- adopt temp model (HE)
- migrate from temp
- delete temp model

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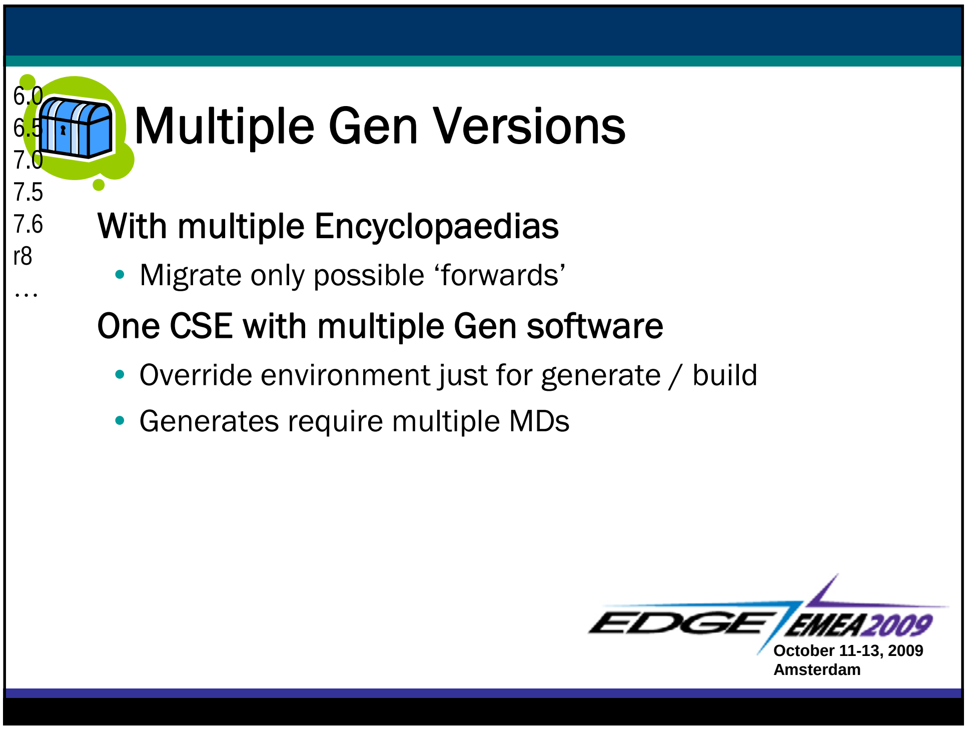

6.0
6.5
7.0
7.5
7.6
r8
…

Multiple Gen Versions

With multiple Encyclopaedias

- Migrate only possible ‘forwards’

One CSE with multiple Gen software

- Override environment just for generate / build
- Generates require multiple MDs

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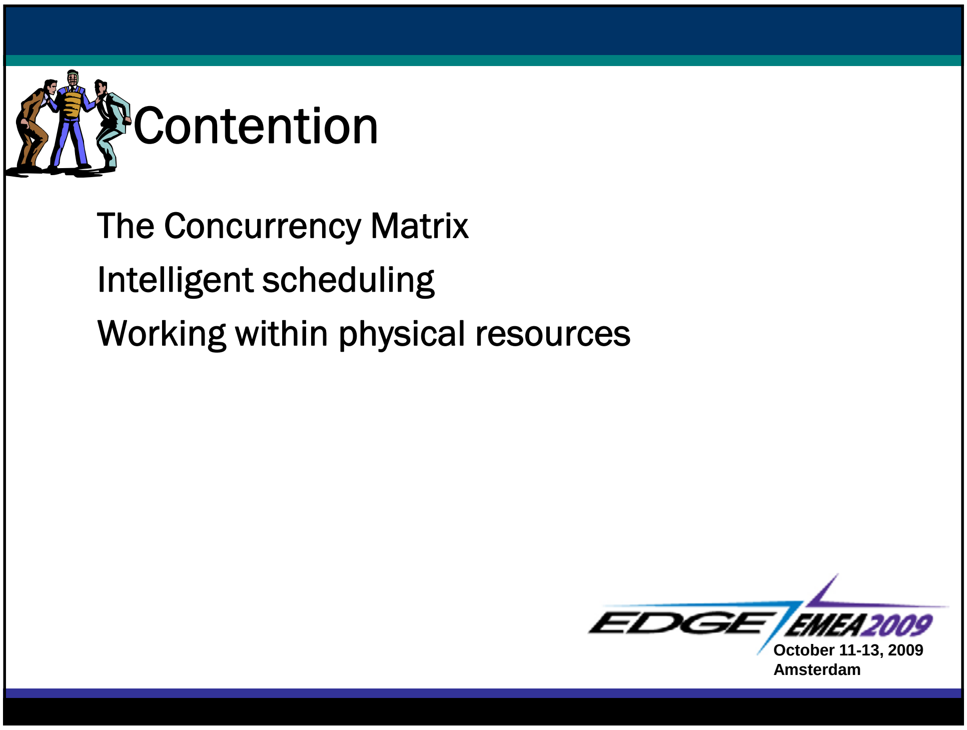

Contention

- The Concurrency Matrix
- Intelligent scheduling
- Working within physical resources

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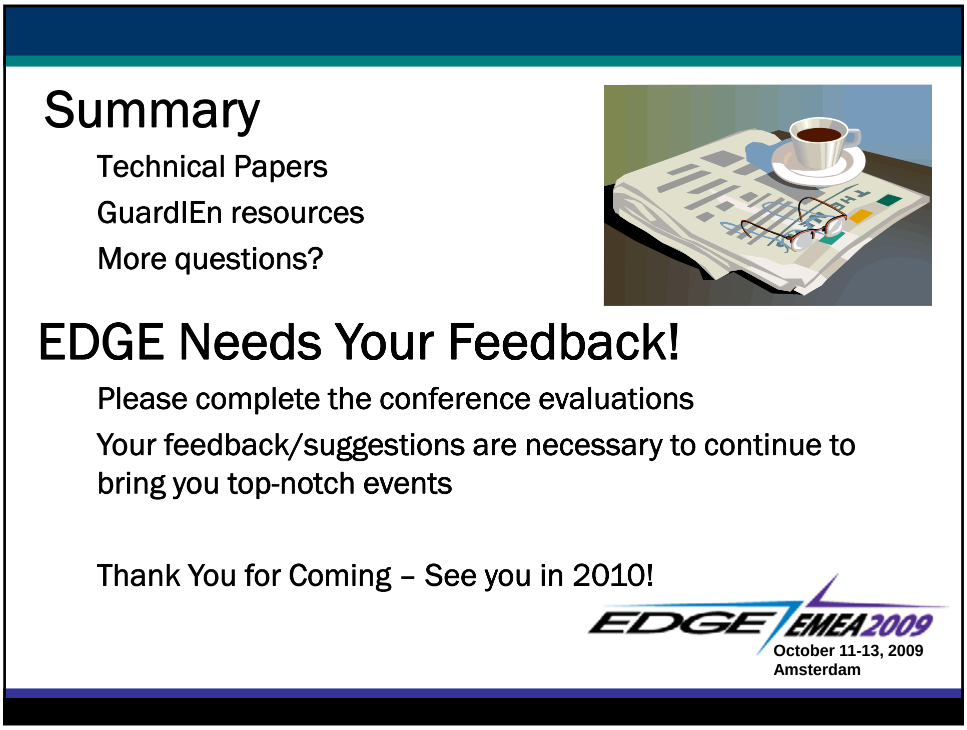

Summary

- Technical Papers
- GuardIEn resources
- More questions?

EDGE Needs Your Feedback!

- Please complete the conference evaluations
- Your feedback/suggestions are necessary to continue to bring you top-notch events

Thank You for Coming – See you in 2010!

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