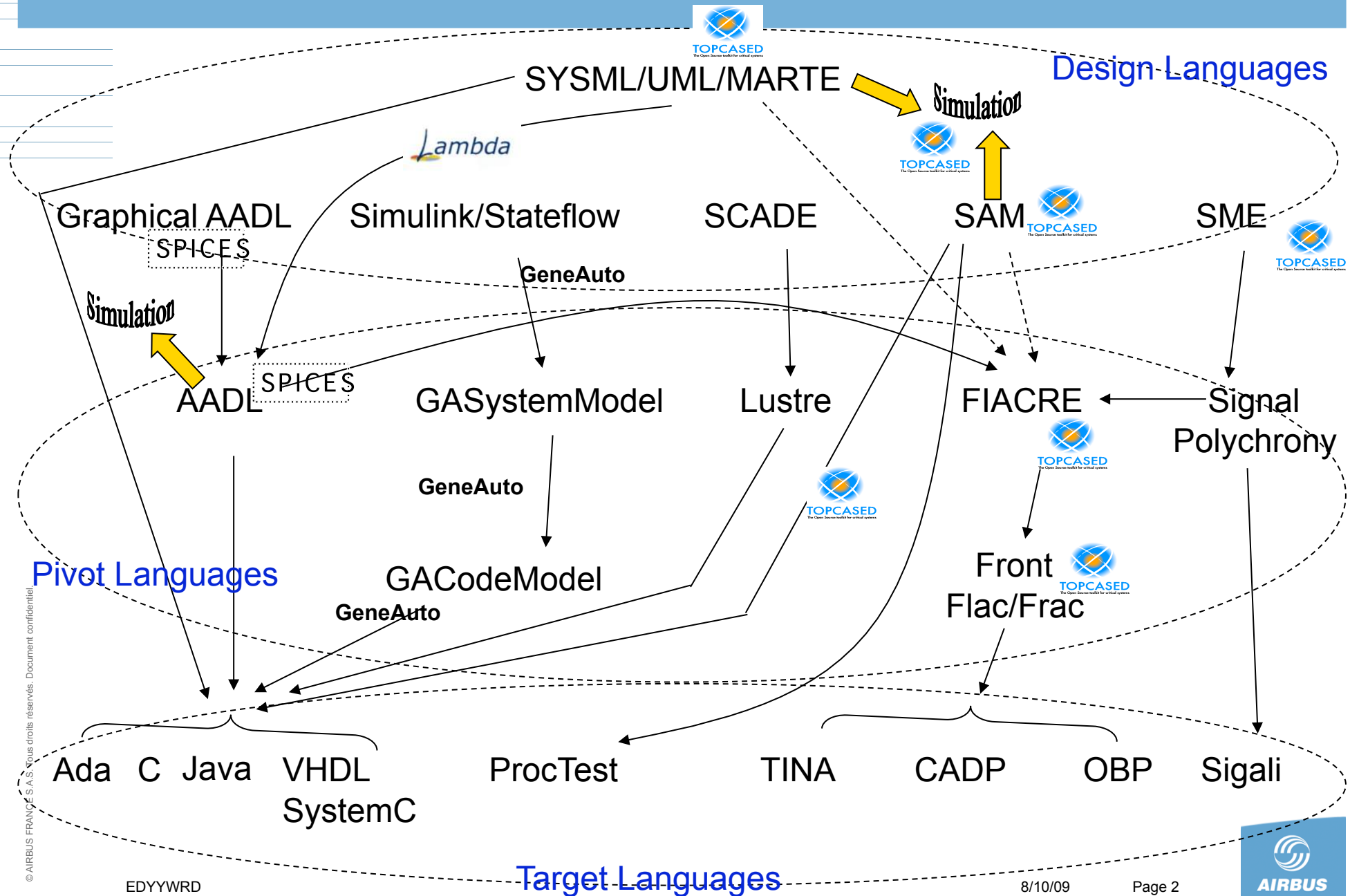Presented by

Patrick FARAIL
Avionics and Simulation Products
AIRBUS France
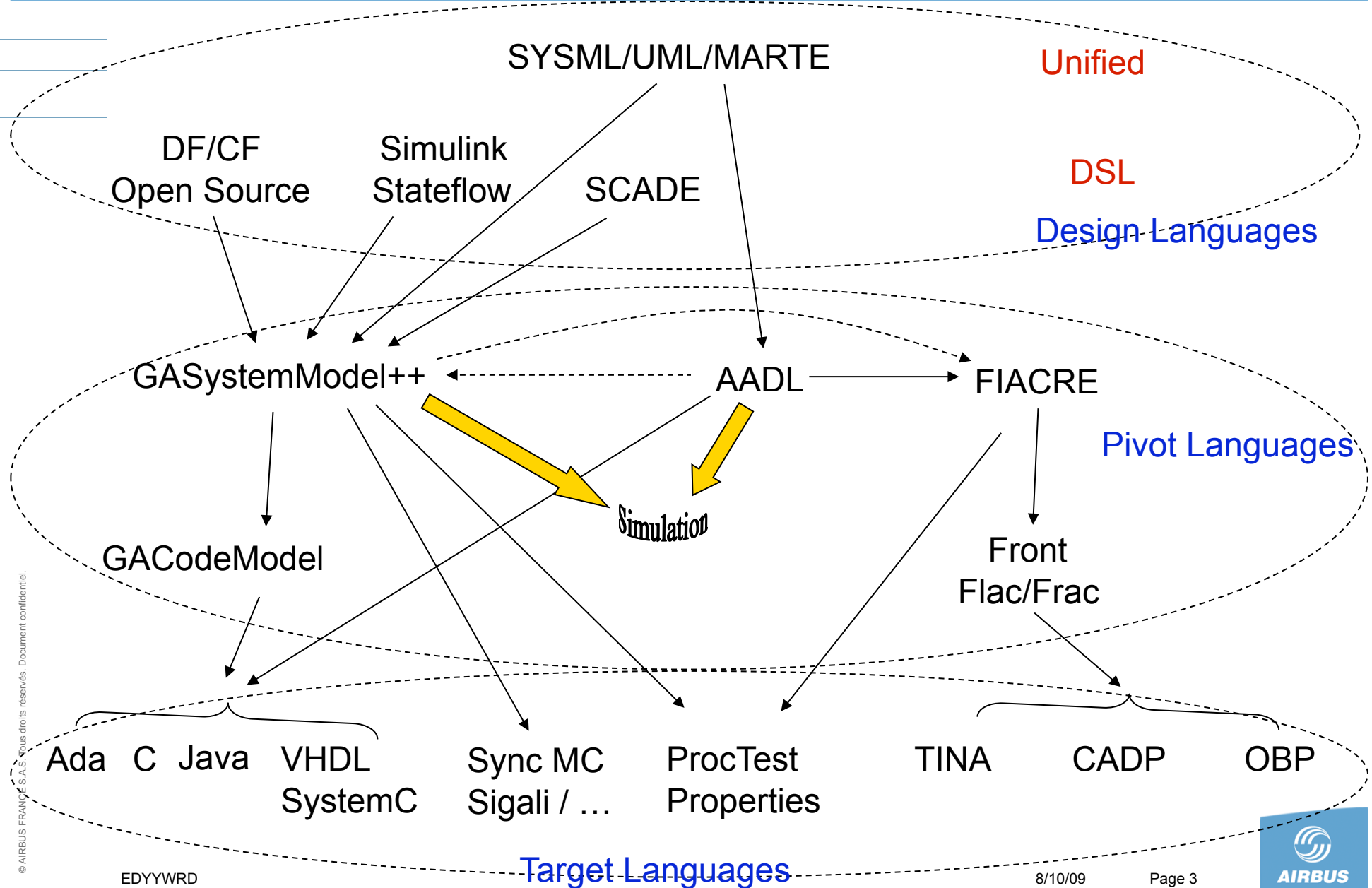
The Future of Meta-Models
TOPCASED – GeneAuto convergent tool chains ?

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TOPCASED – GeneAuto Meta-Models

Design Languages

SYSML/UML/MARTE → Simulation

Lambda

Graphical AADL   Simulink/Stateflow   SCADE   SAM   SME

SPICES

Simulation

GeneAuto

AADL   SPICES   GASystemModel   Lustre   FIACRE   Signal Polychrony

Pivot Languages

GeneAuto

GACodeModel   Front Flac/Frac

GeneAuto

Ada C Java VHDL SystemC   ProcTest   TINA   CADP   OBP   Sigali

Target Languages

TOPCASED – GeneAuto Meta-Models : The Future ???

SYSML/UML/MARTE

Unified

DF/CF
Open Source

Simulink
Stateflow

SCADE

DSL

Design Languages

GASystemModel++   AADL   FIACRE

Pivot Languages

GACodeModel

Simulation

Front
Flac/Frac

Ada   C Java   VHDL
SystemC

Sync MC
Sigali / …

ProcTest
Properties

TINA   CADP   OBP

Target Languages

TOPCASED – GeneAuto Meta-Models : Future Works

➢ Which tool chains do **we want** to converge ?

✓ Which design languages (or part of them) do we want to focus on ? With which semantics

- SysML-UML-MARTE / Scade (V5/V6) / Simulink-Stateflows / AADL / …

- Synchronous / asynchronous

✓ Which activities do we want to focus on ?

- Architecture, Functional Data Flow, Functional Control Flow, Purely algorithmic

✓ Which target languages do we want to focus on ?

- Source Code : Ada, C, Java, VHDL, SystemC. Complete or partial (structural)

- Test Code : RTRT, …

- Formal verification Code and/or Properties : TINA, CADP, Caveat …

- Simulation Code : …

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TOPCASED – GeneAuto Meta-Models : Future Works

➢ Which tool chain **could we** investigate ?

  ✓ Synchronous vs asynchronous semantics

  ✓ Intricate project

➢ Which bridge could we operate between languages ? For which concern/goal ?

  ✓ SysML / Scade-SF ?

  ✓ AADL / Scade / Sim-SF ?

  ✓ For bi-simulation or bi-formal verification ?