

# Blaise Code Generation

A Short History of Blaise Code Generation  
(mainly) in Statistics Denmark

Leif Bochis Madsen, Statistics Denmark

# How can we put questions into Blaise?

- Who is going to do it
  - How often?
- Why writing code is tedious
- It's all about efficiency
  - Work smarter, not harder
  - Division of labour

# Code generation in Stat. DK

- Excel spreadsheets at the turn of the century
  - Conversion by scripting (VB-script, Manipula)
  - Merely copying
- Generating from Word document
  - Macros generating Blaise code
- Word document with tables (Household surveys)
- Generating from repository (Business surveys)
- Blaise Colectica Generator

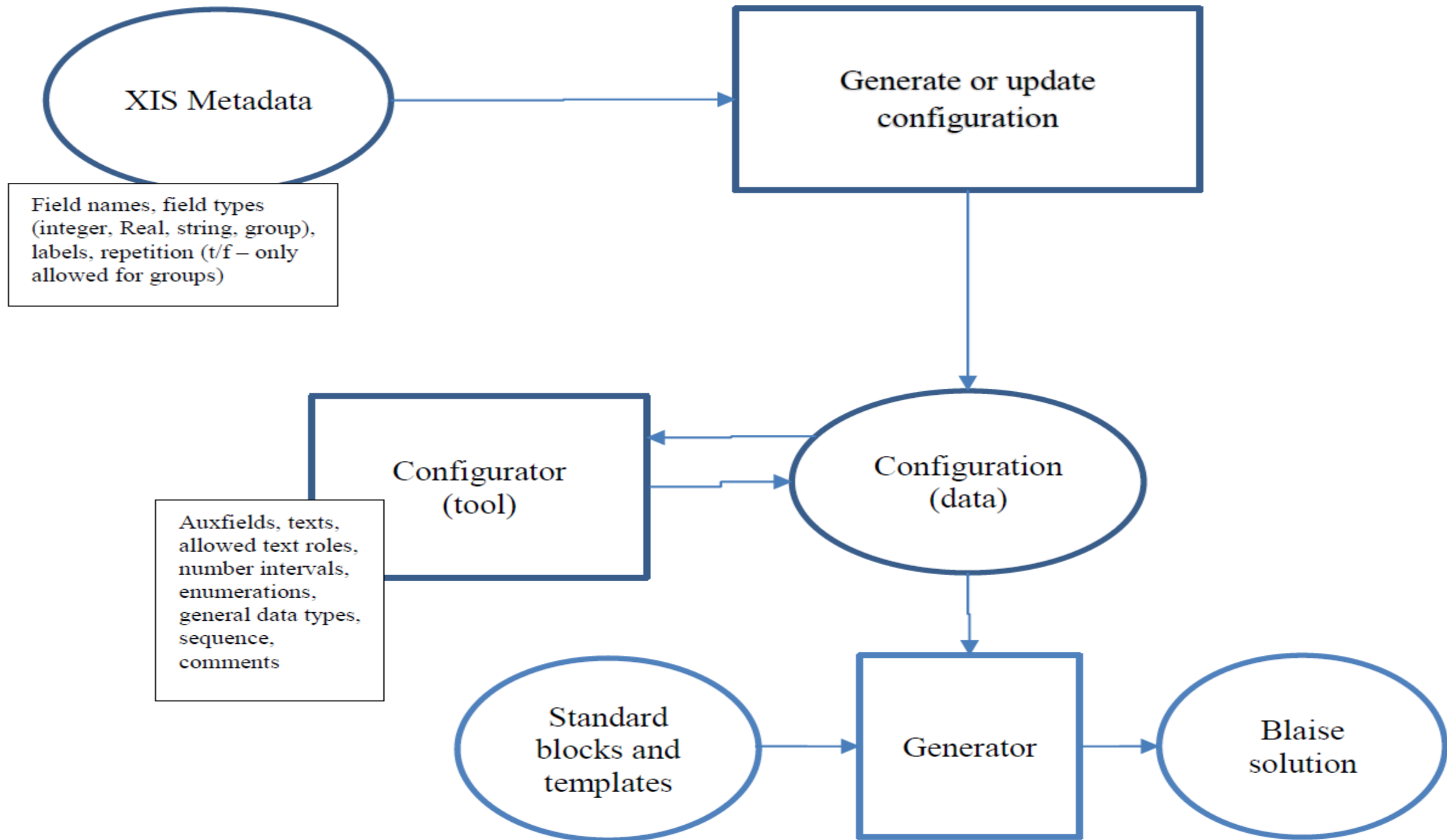
# Code Generator for Household Surveys

- Customers and Subject Matter Specialists should make the spec
- Word document structured with tables
- Considered a "90 % generator"
- Used for 60-70 annual surveys 2010-2020 – and still used
- Blaise 4, later modified to support Blaise 5
- Presented at IBUC 2013

BlockB	Discrimination			Citizenship Danish	<> The questions in BlockB are not asked of Danish citizens
IntroB	The following questions deal with various types of discrimination you may have experienced in Denmark due to your ethnic background				
B1	<p>Within the past year, have you experienced, because of your ethnic background, being denied access to places which other people were allowed to enter?</p> <p>(such as a bus, taxi, nightclub or swimming baths)</p>	YNDR	<p>1 Yes</p> <p>2 No</p> <p>3 Do not know</p> <p>4 Prefer not to answer</p>		

# Business Survey Generator

- Extracting metadata from Business Survey repository (XIS)
  - Relatively poor metadata
- Aimed at establishing compatibility between XIS and Blaise instrument
- Adding more metadata via Business Survey Configurator
  - Refined datatypes (numeric intervals, enumerations, datatype, timetype, etc.)
  - Text roles
  - Auxfields
  - Selection and order of questions and (not too complex) filter conditions
  - Comments
- Generating a package (zip file) – ready to prepare
  - Including standard (include) files and customized files from templates



# Modifying Blaise Code for Business Surveys

- Package comprises a number of files ready for use
  - Solution and project files (bsol, bproj, blax, blax.settings, standard includes)
- And a number of files to modify with respect to:
  - Validation rules
  - Complex conditions
  - Layout instructions
  - Manipula script for producing test data
  - Possibly, lookup datamodels etc.
- One-way generator



# From Blaise to Configuration?

- An experiment was carried out:
  - Generate new solution from Configurator and prepare it
  - Extract metadata as xml
  - Extract metadata from the previous (modified) solution
  - Compare the two, add new fields, remove old ones and leave all other
  - Generate new source code from xml
- Worked fine in sense of producing an almost ready source code
- Alas...
  - All comments in source code were removed

# Colectica

- Only one try yet
- Same problem of synchronization?
  
- But we are planning a closer look soon...

# Conclusion

- Many have worked in this field
- Much of the work is rooted in local culture, language, environments
- Reuse of existing metadata
- Blaise Colectica Generator for the future?
- Probably still need of other generators

# Aims of a generator

- Who is going to use it?
- Level of ambition?
- Extracting from existing metadata?
- Specification "Language"?
- Learning to specify – time to spend?
- How much of the process can be automated?
- Re-generation of modified surveys?

# Thank you!

Questions:

Leif Bochis Madsen

Statistics Denmark

lbm@dst.dk