

INSURANCE RISK MANAGEMENT

# PROPHET ALS MODULAR TRAINING



Empowering the Financial World  
FISGLOBAL.COM

FIS

# CONTENTS

1 Introduction

---

3 Overview

---

4 Assets

---

6 External Liabilities

---

7 Internal Liabilities

---

8 Fund

---

9 ALS Mechanics

---

# Introduction

The following modular approach allows ALS delegates to tailor the course for their needs. Given the range of different functionalities within the library, it is necessary to select modules which are appropriate for the types of models which you will be building or using. For instance, ALS models several classes of assets, from bonds to futures and options, but it is beneficial to focus on those which are held in the modelled fund.

The table-driven approach used by the ALS library allows most users to perform runs and report results without having to alter code. Delegates who wish to understand these tables and general approach of ALS should consider the "User" modules. Those who may need to alter code to, for example, create extra asset types not currently modelled within the latest version of ALS, may consider the "Developer" modules. All modules contain either an exercise or quiz alongside demonstration to reinforce understanding of the content.

Each module takes between one and a half and two hours. Therefore it is typically possible to select 4 modules into each day of training. Courses must consist of at least four modules (i.e. one full day of training).

The modules are also divided into the main types of modelling found in ALS: Assets, Internal Liabilities, External Liabilities and Fund, as well as the other types of modelling available inside ALS, for instance stochastic and dynamic modelling.

For those who would like for a 2-day overview of all the main aspects for a user of the ALS library, consider the recommended modules in bold below: **AU1, AU2, AU3, EU1/IU1, EU2/IU2, FU1, FU2, FU3**. These modules are generally considered as prerequisites for any other modules (including in the ALS Mechanics section), however exceptions may be made.

An overview of all modules followed by brief descriptions on what is covered in each module is given in the following pages.

---

## Making a booking

Due to the bespoke nature of this offering, we would arrange a call to discuss your requirements. Please email the Prophet training team [prophet.training@sungard.com](mailto:prophet.training@sungard.com) to arrange this.

The minimum number of modules which can be taken is four which will equate to one full day of training.

---

## Payment by invoice

Invoices for your company will be raised after the course and will be inclusive of VAT where applicable.

---

## Delegate numbers

The delegate numbers are capped at eight.

---

## Technology

If required, we can arrange the supply of laptops.

---

## Contact information

For training enquiries such as:

- Running a Prophet training course in-house
- Course suitability for an individual
- Suggestions for other Prophet training course subjects

Please email the Prophet Training Team:

**[prophet.training@sungard.com](mailto:prophet.training@sungard.com)**

# Overview

User	Developer
<b>Assets</b>	
<b>AU1:</b> Asset Overview & Configuration	AD1: Create Asset Type
<b>AU2:</b> Bonds, Equities, Cash, Model Reports	AD2: Create ESG data type
<b>AU3:</b> ESG data & Stressing	AD3: Create SPV
AU4: Swaps & Swaptions	AD4: Prepare Asset data
AU5: Options, Caps & Floors, Futures	AD5: Enhance Reporting
AU6: Mortgages	
AU7: Buying & Selling Assets	
AU8: Detailed examples, Assets in context of ALS, Solvency II etc	
<b>External Liabilities</b>	
<b>EU1:</b> External Liability Overview & Configuration	ED1: External Liability Management Action Coding exercise
<b>EU2:</b> Linking up Products, Key variables and Reading Results	ED2: Base Products
EU3: Bonus rate exercise	
<b>Internal Liabilities</b>	
IU1: Internal Liability Overview & Configuration	ID1: Internal Liability Management Action Coding exercise
IU2: Tables & Key variables overview	ID2: Creating new Internal Liability type exercise
IU3: Basic Liability exercise & Results	
IU4: Stressing Internal Liabilities	
IU5: Modelling New Business	
IU6: Additional Liability Exercise	
IU7: Detailed examples, Internal vs External, Liabilities in context of ALS, Solvency II etc.	
<b>Fund Modelling</b>	
<b>FU1:</b> Fund Overview, Structure & Configuration	FD1: Investment strategy coding exercise
<b>FU2:</b> Realignment & Model Reports	FD2: Multiple fund coding exercise
<b>FU3:</b> Changing investment strategy & Results	FD3: FUND_UK coding exercise
<b>FU4:</b> Multiple funds	FD4: FUND_EURO coding exercise
<b>ALS Mechanics</b>	
OU1: Stochastic & Dynamic Basics	OD1: Optimisation & Debugging in ALS
OU2: Nested Structures & ALS	OD2: IMD & IMS in detail
OU3: Stochastic & Dynamic Exercise	

# Assets

---

## AU1: Asset Overview & Configuration

- Standard asset types in ALS 2015 overview
- Structure of asset properties
- Configuration tables (COMPANY\_ASS, ASSET\_VARIABLES, STOCH\_PARAM, ASSET\_REP\_BASIS, GLOBAL)
- Main reporting variables
- Excel templates

---

## AU2: Bonds, Equities, Cash, Model Reports

- Methodology for modelling Bonds, Equities and Cash
- Asset data input
- Goal Seeking of market spread
- Equity Indices and assumptions
- Model Reports
- Small Exercise on modelling bonds and cash

---

## AU3: ESG data & Stressing

- ESG data (STOCHRET, DET\_RETS)
- Other assumption inputs
- Stressing assets
- Stressing exercise

---

## AU4: Swaps and Swaptions

- Methodology for modelling Swaps & Swaptions
- Goal Seeking of market spread for swaps
- Implied volatility for Swaptions
- Model Reports
- Small Exercise on modelling Swaps & Swaptions

---

## AU5: Equities, Options, Caps & Floors, Futures

- Methodology for modelling Options (Vanilla Calls & Puts), Caps, Floors & Futures
- Implied volatility for Options
- Model Reports
- Small Exercise on modelling Options & Futures

---

## AU6: Mortgages

- Methodology for modelling Mortgages
- Repayment schedules
- Prepayment penalties
- Fixed vs floating interest rate
- CMOs (Optional)

---

### AU7: Buying & Selling Assets

- Buying and selling assets
- Realignment overview
- Exercise in buying and selling assets with stressing (e.g. Solvency II)

---

### AU8: Detailed examples, Assets in context of ALS, Solvency II etc

- Overview on other asset types
- More detailed examples with several asset types & stressing etc.
- Overview of where this fits into ALS
- Overview of where this fits into end requirement e.g. Solvency II etc.

---

### AD1: Create Asset Type

- Create new type of bond exercise (e.g. Equity linked note, Convertible bond, Repo bond)
- Refresher on Extended Formula coding
- Getting the most out of Asset Parts
- Reporting Variables
- Reporting Results in Prophet

---

### AD2: Create ESG Data Type

- Create new type of ESG data exercise (e.g. introduce new inflation rate)
- Use this in the valuation of an asset (e.g. inflation linked swap)

---

### AD3: Create SPV

- Create a Special Purpose Vehicle exercise
- Include non-standard assumptions

---

### AD4: Asset Data Preparation

- Use DCS to create asset data
- Use DCS to create ESG data
- Data validation
- Including extra information into model reports

---

### AD5: Reporting

- Create extra reporting variables of varying granularity
- Enhance CSV model reports
- Enhance HTML model reports

# External Liabilities

---

## EU1: External Liability Overview & Configuration

- Overview of External Liability approach
- Configuration tables (LIAB, LIAB\_VARIABLES, CF\_VARIABLES)

---

## EU2: Linking up Products, Key variables and Reading Results

- Product Links
- READ\_RESULTS
- Key variables
- Exercise with term assurance

---

## EU3: Bonus rate exercise

- Exercise with setting bonus rates per segment
- Reporting results in Prophet
- Reporting results in Excel
- Model Reports

---

## ED1: External Liability Management Action Coding exercise

- Set up links between the ALS and liability product (e.g. dynamic lapse rate)
- Involves coding in liability library and ALS library
- READ\_RESULTS in more detail

---

## ED2: Base Products

- Structure of products
- Example with base product
- Cash flow flexing approach overview in more detail



# Internal Liabilities

---

## IU1: Internal Liability Overview & Configuration

- Overview of internal liabilities approach
- Types of liability which may be modelled
- Configuration Tables (LIAB, LIAB\_VARIABLES, CF\_VARIABLES)
- Calculation Steps

---

## IU2: Tables & Key variables overview

- Tables (CFLOW\_DEPEND, CHARGES, DET\_CF, ERET, LAPSES, LIAB\_ASS, LIAB\_SCALARS, MAT\_SMOOTHING, PP\_EXPENSE, RE\_FIXED\_Y, RESERVING\_BASES, RESILIENCE, SURR\_PEN)
- Key variables
- Calculation of reserves & cashflows

---

## IU3: Endowment Assurance Exercise & Results

- Endowment Assurance product Exercise
- Reading Results in Prophet
- Reading Results in Excel
- Model Reports

---

## IU4: Stressing internal liabilities

- Stressing internal liabilities methodology
- Stress tables configuration
- Example of stressing internal liabilities

---

## IU5: Modelling New Business

- Modelling future new business without a sales file
- Modelling future new business with a sales file
- Exercises

---

## IU6: Additional Liability exercise

- Introduce other types of internal liabilities into the model in more detail
- For example, annuities or unit-linked products.
- Extra data requirements and reporting variables for other liability types

---

## IU7: Detailed examples, Internal vs External, Liabilities in context of ALS, Solvency II etc.

- Reserving Types for Internal Liabilities
- More detailed examples
- Overview of where this fits into ALS
- Overview of where this fits into end requirement e.g. Solvency

---

## ID1: Internal Liability Management Action Coding exercise

- Set up links between asset and internal liabilities (e.g. dynamic lapse rate)
- Look at structure of code inside key variables in the ALS library

---

## ID2: Creating new Internal Liability type exercise

- Create more complex liabilities internally in the ALS library
- Consider different types of benefits outside the standard offering within the ALS library
- Consider different reserving bases
- Consider different assumption types for modelling liabilities

# Fund

---

## FU1: Fund Overview, Structure & Configuration

- Structure within ALS
- Funds, Pools, Segments
- Configuration tables ( FUND\_ASS, COMPANY\_ASS, ASSET\_POOL\_RULES, ASSET\_POOL\_BASIS)

---

## FU2: Realignment & Model Reports

- Realignment
- Buying & selling assets with examples
- Model Reports

---

## FU3: Changing Investment Strategy & Results

- Exercise in adjusting investment strategy and timing or realignment
- Reading Results in Prophet
- Reading Results in Excel

---

## FU4: Multiple Funds

- Multiple fund modelling
- Shareholder fund
- Exercise in bringing two funds, one of which being shareholder fund

---

## FD1: Investment Strategy coding exercise

- Explore key variables where realignment takes place
- Understand the structure of the realignment process in more detail
- Introduce new types of restrictions for trades in funds and pools

---

## FD2: Multiple Fund coding

- Introduce fund stacking within a single ALS product
- Coding of Fund transfers
- Coding of Shareholder dividends

---

## FD3: FUND\_UK coding exercise

- Focus on UK fund types – those which are under the FUND\_UK indicator
- Look at the \*\_UK variables in detail
- Coding exercise to introduce alterations in the calculation of the fund and asset share

---

## FD4: FUND\_EURO coding exercise

- Focus on European fund types – those which are under the FUND\_EURO indicator
- Look at the \*\_EURO variables in detail
- Coding exercise to introduce alterations to existing profit-sharing algorithm.

# ALS Mechanics

---

## OU1: Stochastic & Dynamic Basics

- Stochastic modelling
- ESG data for simulations
- Stochastic structures & run settings
- Stochastic summaries
- Dynamic structures & run settings
- Stochastic & dynamic example

---

## OU2: Nested Structures & ALS

- Nested structures
- Nested structures demo (e.g. Solvency II, TVOG example)

---

## OU3: Stochastic & Dynamic Exercise

- Stochastic model which includes dynamic link exercise

---

## OD1: Optimisation & Debugging in ALS

- Optimisation in detail within the ALS library
- Debugging in ALS
- Combined exercise in debugging and optimisation.

---

## OD2: IMD & IMS in detail

- In-Memory Dynamic methodology
- IMD exercise
- In-Memory Stochastic methodology
- IMS exercise
- Diagnostic file

### About FIS' Prophet

FIS' Prophet solution is a leading actuarial modeling system that helps insurance and financial services firms develop more profitable products faster, improve risk management decisions, and meet their reporting responsibilities efficiently. Prophet provides comprehensive coverage across life, general insurance, health and pensions for all major insurance markets on a single platform, providing common models, code, assumptions and reporting capabilities, plus end-to-end data management and business intelligence. It offers actuaries an easy-to-use, flexible product design environment combined with a controlled, enterprise-level production environment, enabling the fast delivery of accurate, auditable and clearly presented information to risk managers, senior management and regulators. Prophet can be deployed on-premise, hosted or on the cloud, and is relied on by more than 10,000 users at over 850 customer sites in more than 65 countries.

### About FIS

FIS is a global leader in financial services technology, with a focus on retail and institutional banking, payments, asset and wealth management, risk and compliance, consulting and outsourcing solutions. Through the depth and breadth of our solutions portfolio, global capabilities and domain expertise, FIS serves more than 20,000 clients in over 130 countries. Headquartered in Jacksonville, Florida, FIS employs more than 55,000 people worldwide and holds leadership positions in payment processing, financial software and banking solutions. Providing software, services and outsourcing of the technology that empowers the financial world, FIS is a Fortune 500 company and is a member of Standard & Poor's 500® Index. For more information about FIS, visit [www.fisglobal.com](http://www.fisglobal.com)



[www.fisglobal.com](http://www.fisglobal.com)



[twitter.com/fisglobal](https://twitter.com/fisglobal)



[getinfo@fisglobal.com](mailto:getinfo@fisglobal.com)



[linkedin.com/company/fisglobal](https://linkedin.com/company/fisglobal)