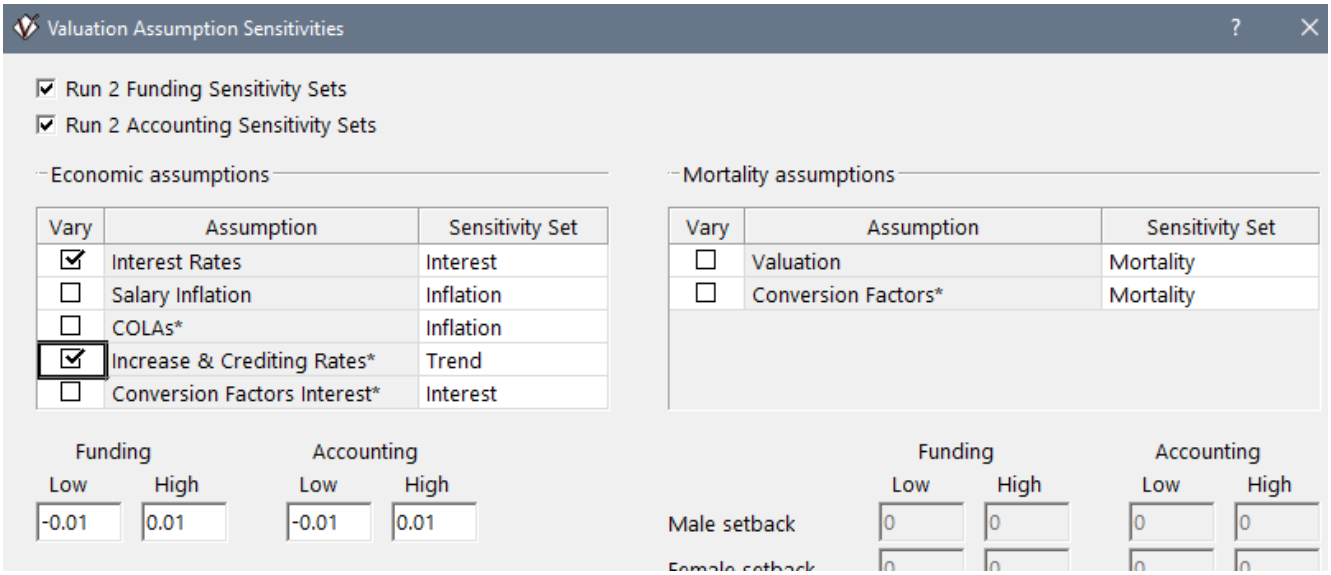
What's New in version 3.17 March 2022

ProVal version 3.17 introduces the ability to run multiple sets of sensitivities in a single valuation, deep compare of plan definitions, enhanced experience study output, and a defined contribution allocation tool. Full details plus many other new features are described below.

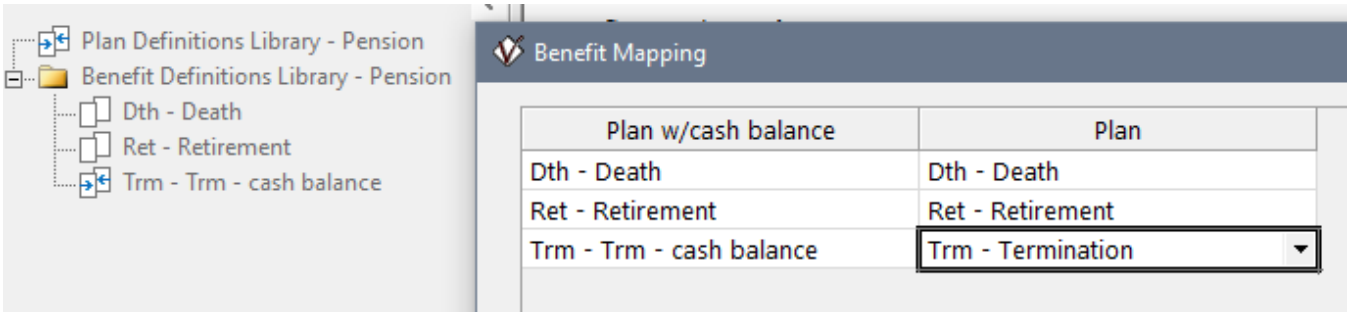
Valuation Sensitivities

- **Sensitivity Sets.** Multiple sets of sensitivities can now be run in a single valuation, such as +/-1% inflation and +/-1% interest. This can eliminate up to four separate valuations when multiple sets of sensitivities are desired.



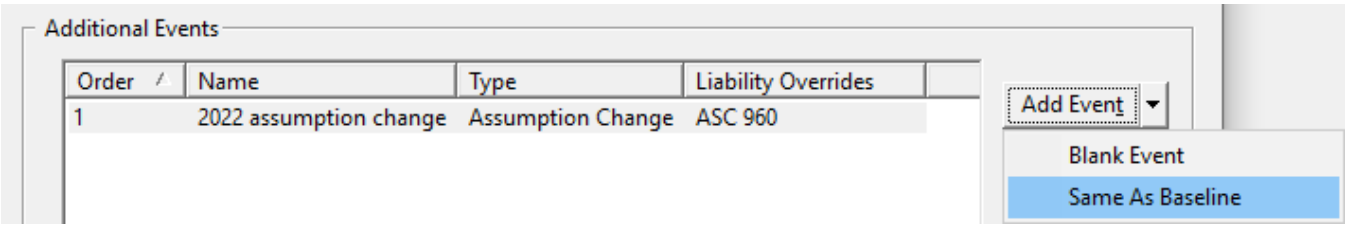
Interface

- **Deep Compare of Plan Definitions.** Comparing two Plan Definitions now automatically compares the underlying benefit definitions too. This eliminates the need to leave the plan definition comparison, go to the benefit definition library, remember which benefit definitions to compare, and then compare them. ProVal makes an intelligent guess to match up benefits between the two plans. You can modify ProVal's guess by clicking the Benefit Map button.

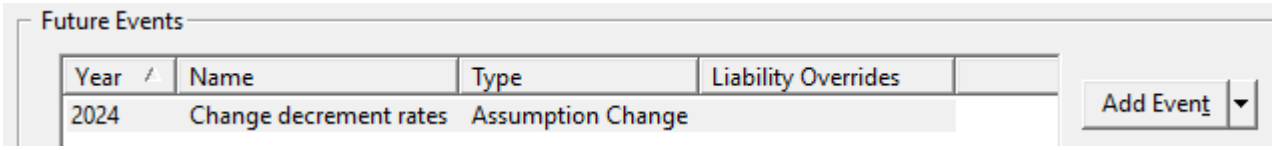


- **Editing Events**. Valuation Set & Forecast events have been redesigned to let you:
  - Create new events by starting with existing events. This might be useful for complicated setups with lots of overrides and many similar events. To create a new event based on an

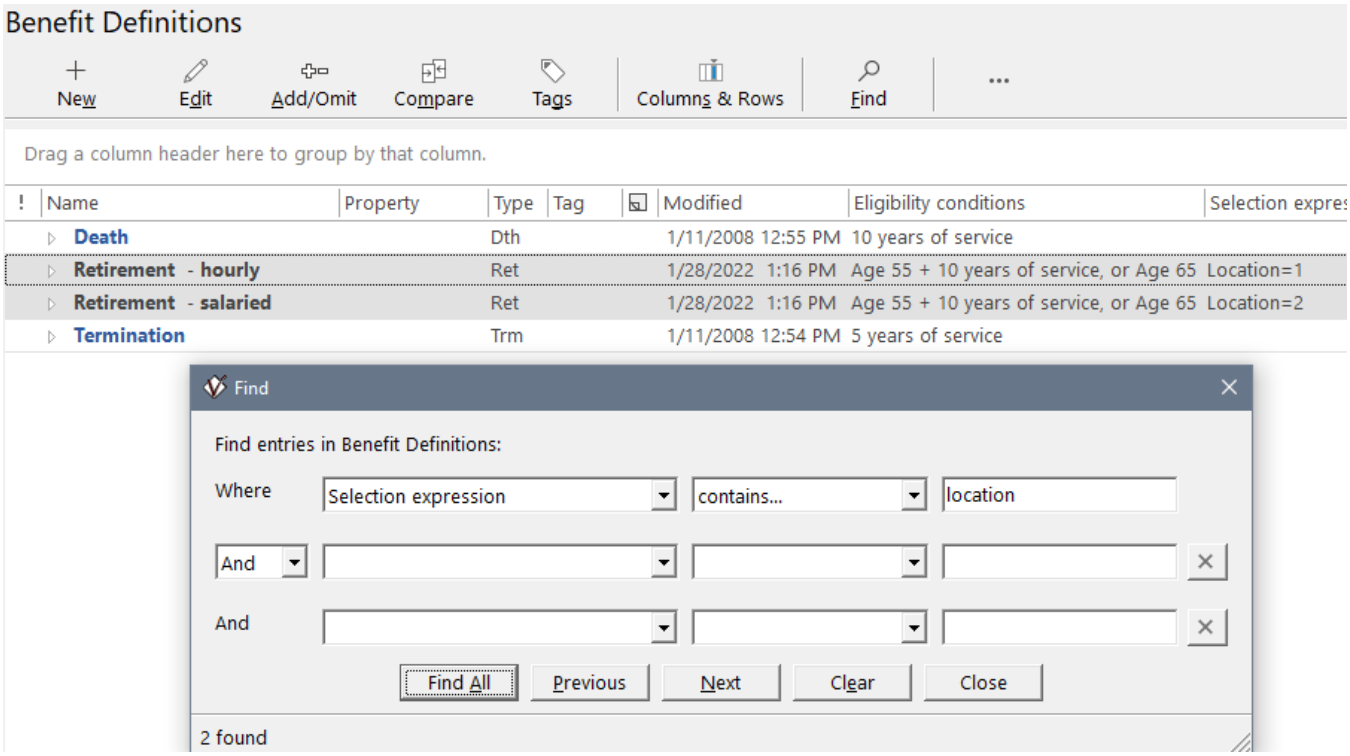
existing event, either edit the existing event and save as new or click Same As Baseline on the Add Event button's dropdown menu.



- Change the type of an event in a Valuation Set, for example from gain/loss to assumption change. This is useful if either the type was set wrong initially or if you wish to edit the event and save as a new event.
- See which events have liability overrides without having to edit them one by one.
- See which year forecast events occur in without having to edit them one by one.



- A Find feature has been added to the Plan Definition Editor which lets you search through the benefit definitions and underlying components. For example, you could use the search to find the benefit definitions with a specific selection expression.



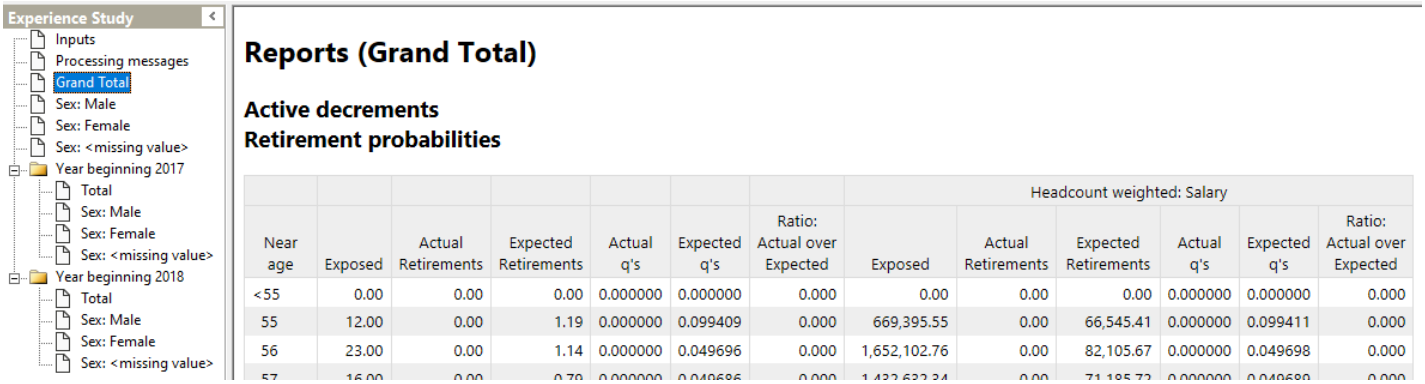
Forecasting

- **Expanded control of future valuation assumptions**. The Valuation Benchmark is an additional set of core projection sensitivities that let you vary future valuation assumptions (e.g., cash balance interest crediting rate or COLAs) in a forecast independent of changes to the main valuation interest rate assumption. For more information, see Future Valuation Assumption Changes on page 9.

- The actuarial liability can now be forecasted to a full yield curve in U.S. Qualified and Canadian modes where it was previously restricted. This is especially useful for U.S. Qualified PPA plans that wish to model a plan termination liability using the actuarial liability. In addition, the interpolation of the actuarial liability in all modes has been made more accurate.
- A new custom forecast variable, CUMERCONT, returns the sum of employer contributions through each forecast year.
- In Deterministic & Stochastic Forecasts > Custom Output, there is now a backdoor button to the custom variable library. Now you don't need to leave the custom output screen to set up or modify custom variables.
- If valuing an end of year additional contribution to meet a custom funding ratio, now a second custom ratio can be specified. This is useful if a plan has, for example, a contribution policy to maintain a 100% PBGC Not-at-risk funded ratio and a 110% Funding Not-at-risk liability funded ratio. Previously, a policy such as this would have required iterative runs.

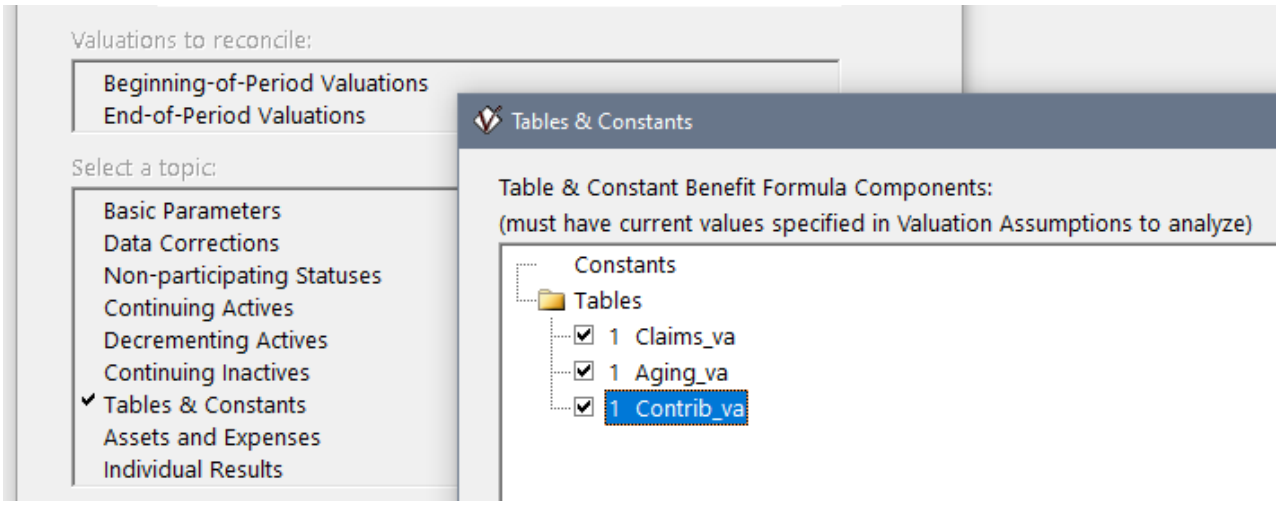
Experience Study

- You can now generate weighted and unweighted results in one run as well as obtain results by year and subtotal separately. Essentially, one experience study run can now generate the same results that previously required four separate runs! In addition, the output is in a modernized format which is easy to navigate.



Gain/Loss Analysis

- A new topic, called Tables & Constants, lets you analyze the difference between expected and actual values for table and constant benefit formula components that have current values specified in valuation assumptions. This is especially useful for OPEB plans that have costs set in valuation assumptions. Previously, if the claims didn't change as expected, a separate run was needed to capture the gain/loss associated with the change in claims.



U.S. Defined Contribution Plans

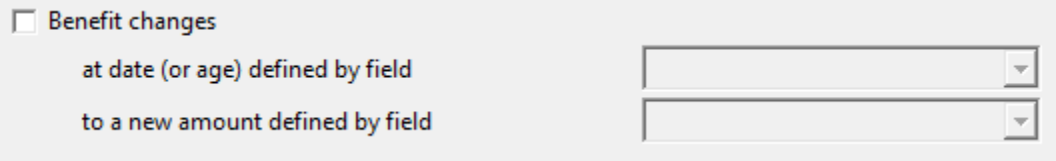
- **DC Allocation tool.** A new Allocation tool lets you calculate expected employer match, true-up, and employer non-elective contributions for members of a U.S. Defined Contribution plan. These calculations are based on DC Contribution Definitions, which define the eligibility and contribution formulas under the plan. You can access this tool from the DC tab when editing a database or under Tools on ProVal's main screen. For more information, see DC Allocation tool on page 11.

All Plans

- **Salary Inflation.** In valuation and projection assumptions, salary inflation can now vary by coded field and/or calendar year. This is especially useful for collectively bargained plans where increases by group are known for several years in the future or for disabled participants assumed to have no future salary increases.
- Valuation and core projection results will no longer be erased if comments are added in an underlying benefit definition formula (e.g., "Formula ; comment"), benefit formula component, or accrual basis component.

Pension Plans

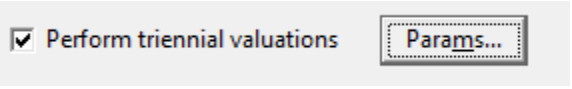
- **Level Income Option for inactives.** A new parameter lets you change the benefit amount at a specified date for inactive Life Annuity, Certain & Life Annuity, and Certain Only payment forms. This can be used to model a Social Security Level Income or Bridge Benefit annuity payment form in one inactive benefit instead of two.

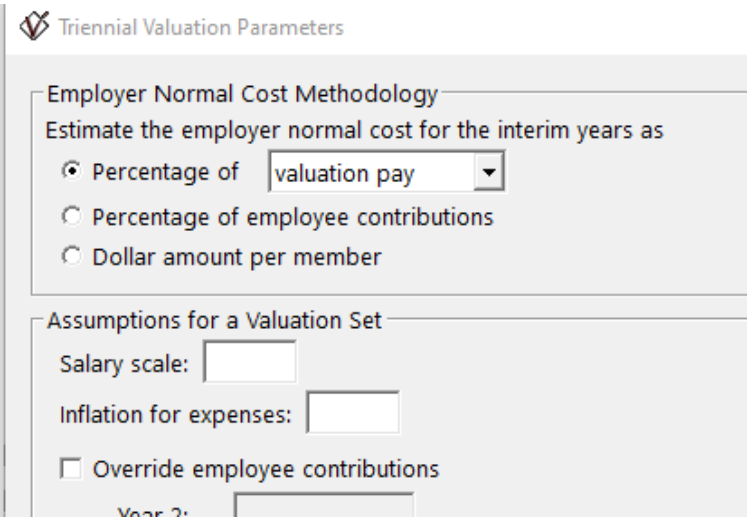


- Vested liability results by decrement (ret, trm, etc.) are now categorized strictly by decrement type rather than by benefit contingency. For example, vested liabilities for the termination decrement might previously have included participants who decremented under the retirement or disability assumption because they were not vested in the retirement or disability benefit as of the valuation date but were eligible for the termination benefit. If you prefer the previous methodology, you can simply view results by benefit and group benefits with the same contingency together in the output.
- Joint & Survivor payment forms now support deferral by years or age/svc/points when the beneficiary is determined at member death, or when retired member mortality is used for beneficiaries prior to member death.

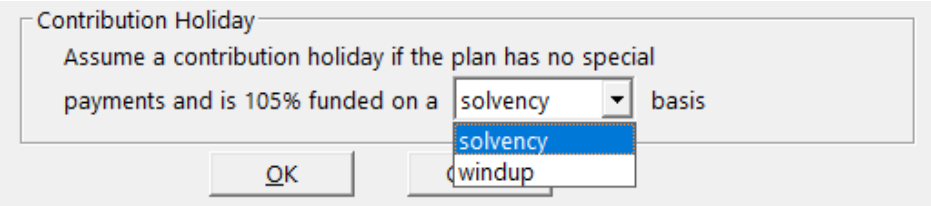
Canadian Plans

- **Triennial Valuations in a Valuation Set**. When triennial valuations are selected in the Asset & Funding Policy, a new Valuation Set exhibit projects contribution requirements for the three years following the valuation date based on the information provided under the Params button next to the triennial valuation checkbox. This exhibit is useful for estimating future contributions without requiring a forecast.

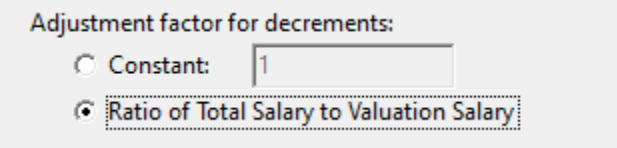




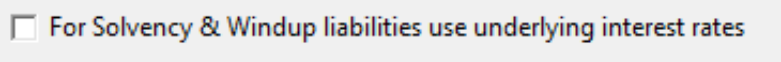
- **Contribution holiday.** In Ontario, a contribution holiday can now be calculated based on either a solvency or windup basis. Previously, it was determined based on a windup basis.



- **Normal cost adjustment for decrements.** In the Asset & Funding Policy, a new parameter lets you automatically adjust the normal cost based on the ratio of Total Salary to Valuation Salary. Previously, you could adjust the normal cost based on a constant, but the new parameter eliminates the need for annual updating and allows the adjustment to change during a forecast.



- In Valuation Assumptions, increase rates for solvency/windup liabilities can now be based on underlying interest rates even when the ongoing assumptions are not (based on a specified constant or variable interest rate).



- In Valuation Assumptions, the average entry age normal funding method now supports an expense allowance based on percent of salary.

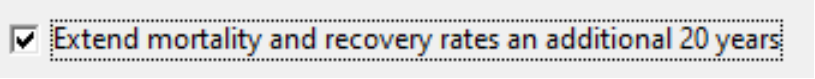
U.S. Qualified Plans

- Added support for the **Infrastructure Investment and Jobs Act** revised interest rate corridors. (This was originally released in a 3.16 update but included here in case you missed it.)
- Added '**SOA Scale MP-2021**' to Mortality Improvement Scales library. (This was originally released in a 3.16 update but included here in case you missed it.)
- **Improved the Reconciliation of Plan Benefits (ASC 960) exhibit**. The Asset & Funding Policy > Prior Year Values topic now lets you enter the prior year ASC 960 interest rate. This is useful if the ASC 960 interest rate on the valuation date is different than it was the prior year.

Additionally, if a yield curve is assumed, the decrease in the discount period will be based on the ABO effective interest rate.

OPEB Plans

- In Valuation Assumptions, LTD plans referencing the 1987 NAIC table can now extend rates 20 years beyond the end of the table based on a new checkbox.



Sample Lives

- **Entry Age Liability**. The development of the entry age liability now shows intermediate present values at funding age rather than at current age. The entry age normal liability and normal cost remain unchanged. Similarly, the individual results output items PVFBfa, PVFSfa, and PVFLfa will now be at funding age rather than at current age.
- **Improved Salary detail.** The Salary sample life report for Valuations now separately displays salary inflation and merit increases. It also displays any service used to look up values in a service-related merit scale table. This makes it much easier to check assumed increases in compensation over time.
- ProVal now remembers which record was last viewed so you don't have to reselect each time you leave and re-enter sample lives.
- The Present Value of Benefits and Post-Termination PVB at Termination reports now display:
  - Unrounded age (previously rounded age was displayed) and service based on each service definition used to determine eligibility. This makes it easier to check ProVal's determination of eligibility for each benefit definition.
  - The service definition underlying any service-based election tables. This will make service-based table results much easier to check, especially if rates also vary by coded field.

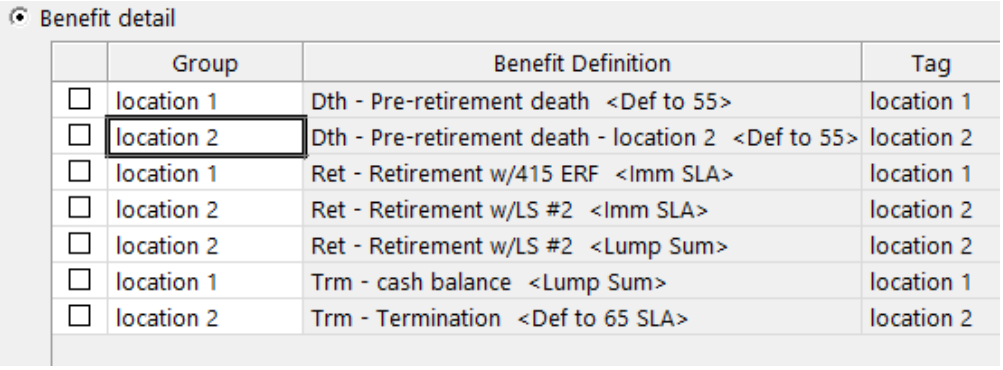
Census Data

- **Save as.** In the data editor, a new "save as" option on the File menu lets you save the current database, including any changes, as a new database file. This is useful if you make edits, then realize you still want a copy of the original database you have open.
- **Screen Data output**. Current and prior year fields with the same name are now displayed next to each other. This makes it easy to directly compare these values year over year.
- **Expression Sets.** The Add/Remove list now includes the last modified date to let you select the most recently created Define Field by Expression and Define Field by Table entries.
- **Change History.** Additional information is now saved to the change history:
  - When a database is copied or saved as new, an entry is added to the change history
  - When importing data, the name of the record layout is included
  - When running Merge Data, the key field is included

  In addition, Expression sets have been combined into a single entry. Previously we showed each define field expression run but no information indicated an expression set was run.
- **Merge Data tool.** A new option lets you override existing (non-blank) values on the target database to be replaced with blank values from the source database.
- When importing data, values in numeric and date fields that are just a dot (".") will now be treated as blanks. This avoids the need to scrub your data of dot-filled values before importing.

Output

- **ABO effective interest rate**. In pension modes, new output variables are available for ABO EIR and average benefit timing factors.
- **Forecast exhibits.** Columns on exhibits are now labeled with the valuation date (10/1/2021, 10/1/2022, etc.) or measurement date (4/1/2022, 4/1/2023, etc.), for funding and accounting, respectively. Previously, exhibit columns were only labeled with a year (2021, 2022, etc.) which was confusing when the measurement date was different than the valuation date.
- You can now print, save, and copy all sections of deep comparisons, such as when comparing two valuations, two plan definitions, etc. Previously, you could only print, save, or copy the page currently being viewed.
- Benefit tags are now displayed in Valuation and Core Projection Output > Variables > Details. This enables you to copy and paste the tags into the group column to easily use them for grouping.


Benefit detail

	Group	Benefit Definition	Tag
☐	location 1	Dth - Pre-retirement death <Def to 55>	location 1
☐	location 2	Dth - Pre-retirement death - location 2 <Def to 55>	location 2
☐	location 1	Ret - Retirement w/415 ERF <Imm SLA>	location 1
☐	location 2	Ret - Retirement w/LS #2 <Imm SLA>	location 2
☐	location 2	Ret - Retirement w/LS #2 <Lump Sum>	location 2
☐	location 1	Trm - cash balance <Lump Sum>	location 1
☐	location 2	Trm - Termination <Def to 65 SLA>	location 2

Report Writer

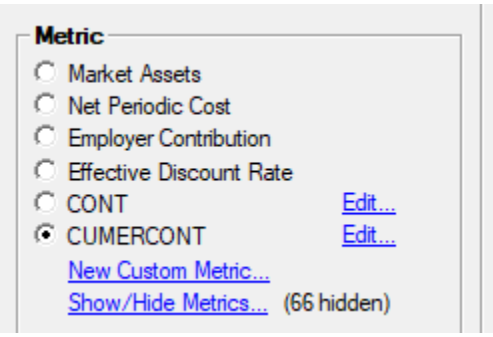
- **Results by subtotal.** Valuation Set liability results by subtotal are available to save into an Access database for use with the Report Writer (via Valuation Set Exhibits). This requires that all of the underlying Valuations in a Valuation Set use the same subtotal field.
- **Status Reconciliation** output can now be saved to an Access database for use with the Report Writer.
- New automatic formats have been added that allow you to insert fields that will only display 1 decimal place.
- Support for fields in headers and footers of the template document has been added.
- New Template Document keywords have been introduced, {DELROWIFZERO} and {DELCOLIFZERO}, for managing tables with a variable number of rows and columns. These keywords will, upon publishing, erase a row or column from a table when all the values in that row or column are zero (or blank). For example, a table might include a row with transfers' liabilities, but you want that row deleted if the plan has no transfers.
- Field codes in your Template Document for Descriptive Statistics have been revamped so that you get consistent results from year to year even if your data changes, making some groupings appear or disappear; for example, if Descriptive Statistics are grouped by status, but last year you had transfers and this year you don't. To get these revamped field codes, insert Field Codes into your template document from the Report Writer.

ProVal API

- A new API call lets you modify benefit and decrement tables.

ProVal PS

- Users can now add and edit custom metrics directly in ProVal PS (and via the ProVal PS API). Previously, adding a custom metric required rerunning a forecast in ProVal and creating a new ProVal PS file.



Changes Log

- Be sure to read the changes log (see the "changes log.doc" file in the ProVal directory) about updates to certain calculations that may change results.

New WinTech Team Member!

We are pleased to introduce **Melissa Atkinson** who recently joined our team. She is an experienced actuary who will be working on future ProVal enhancements. Please say hello to Melissa if you reach her at ProVal support.

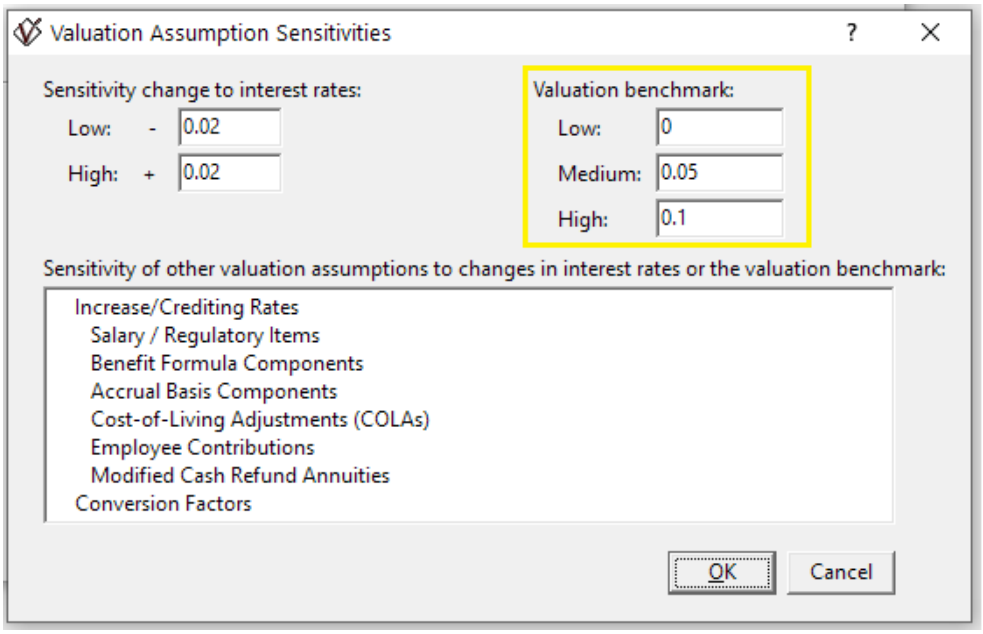
Future Valuation Assumption Changes

ProVal 3.17 includes a powerful enhancement in Core Projections that allows expanded control of future valuation assumptions. The Valuation Benchmark is a new set of core projection sensitivities that allow you to define a relationship between one or more valuation assumptions and the benchmark.

Previously, you could only vary valuation assumptions based on changes in the valuation interest rate. However, this functionality was not available for duration-based valuation interest rate assumptions (i.e., yield curves).

Some pension plans have valuation assumptions that are reviewed and updated each year based on changes in market rates. The Valuation Benchmark can be used to link changes in market experience to changes in the valuation assumptions. A few examples of when this enhancement could be useful include:

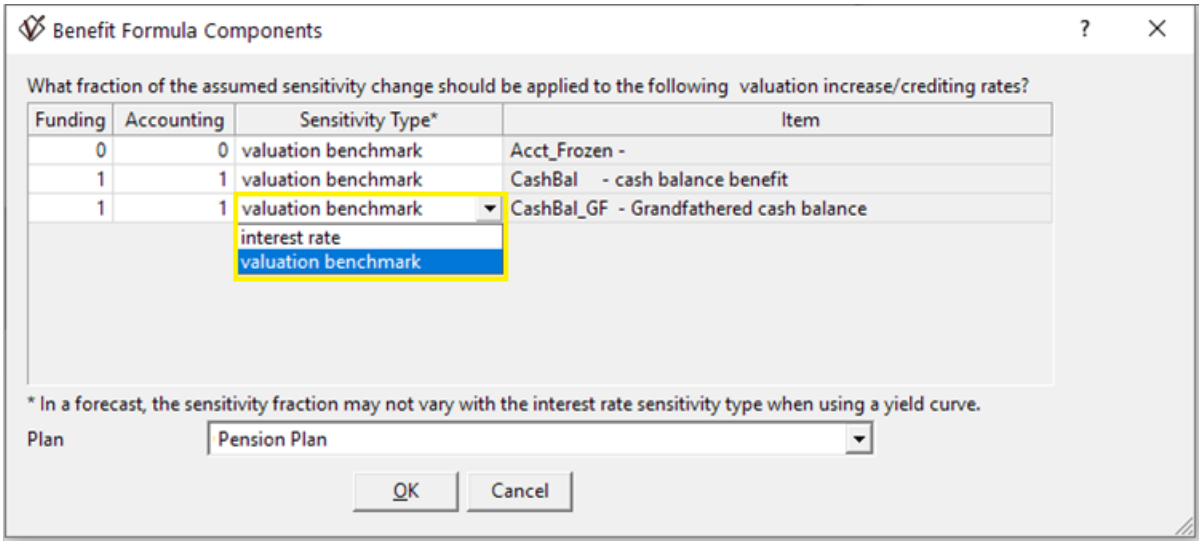
- Interest crediting rates for cash balance plans
- Lump sum and optional payment form conversion factors
- Valuation COLA assumptions that are based on prior year inflation



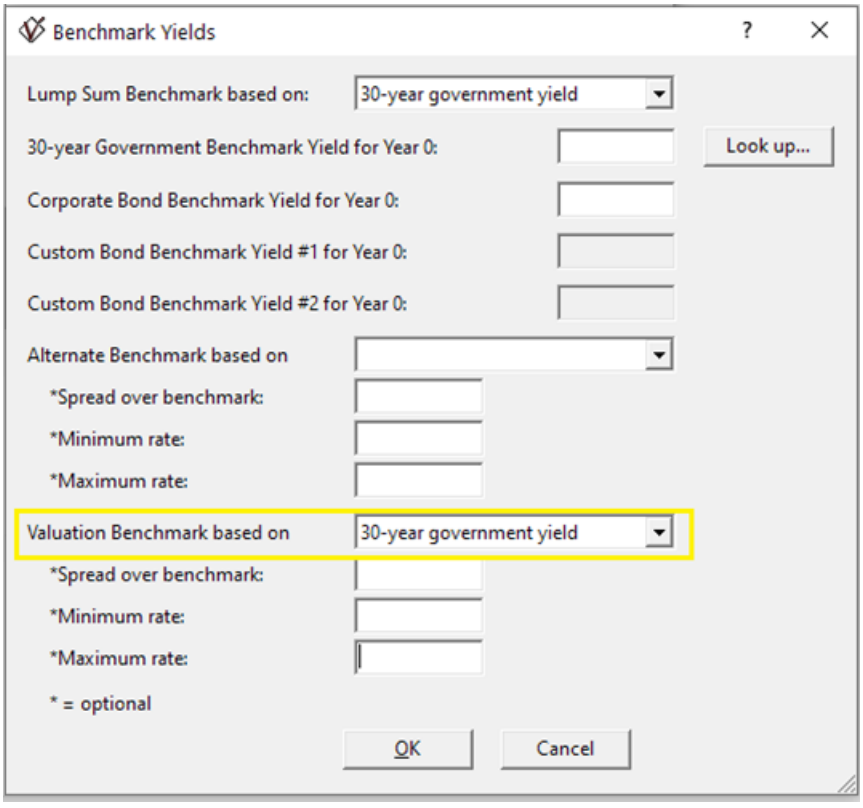
Parallel to the way ProVal currently works for valuation interest rate sensitivities, you can specify how each funding and/or accounting valuation assumption should change as a fraction of how the valuation benchmark changes. The sensitivity fraction can be any number between 0 to 2 (0% to 200%).

Example

Consider a cash balance plan whose interest crediting rate is updated each valuation date to equal the current 30-year government bond yield. You can now reflect this by tying the annual assumption change to the valuation benchmark, which in this example will be set to be the 30-Year government bond yield. In your projection assumptions, to get the most accurate forecast results, always try to choose the low, medium, and high valuation benchmark so that the range is likely to cover the range of results expected from your forecast (e.g., 0%, 5%, and 10% for this example). For each of your applicable cash balance benefit formula components, you would then enter a sensitivity fraction of 1 so that the assumption will change one-to-one with the change in the valuation benchmark.



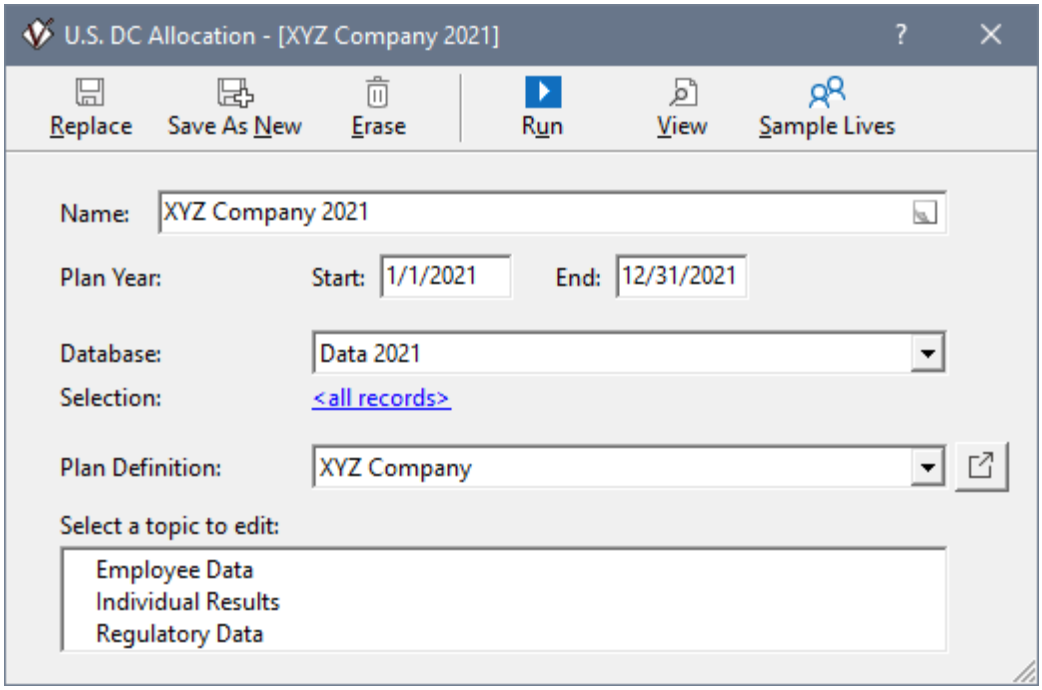
The experience valuation benchmark is a new parameter in both the deterministic and stochastic assumptions. In deterministic assumptions, you enter the rate directly in the "Investment Return, Inflation & Benchmark Yields" topic just as you would for the lump sum benchmark or alternate benchmark. In stochastic assumptions, you define the valuation benchmark based on either the simulated 30-year government yield or any of the other asset classes specific to your capital market simulation.



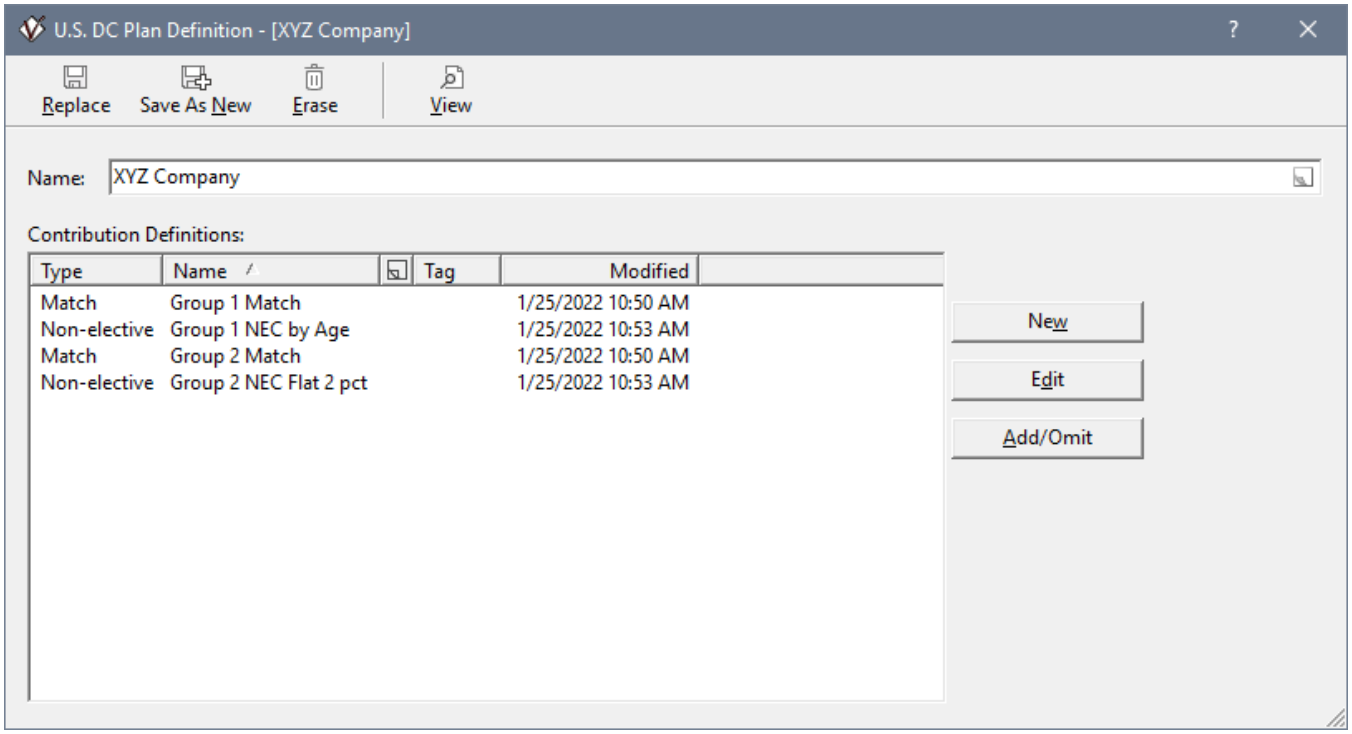
DC Allocation Tool

The new Defined Contribution Allocation Tool in version 3.17 is ProVal's first DC-specific feature. It allows you to calculate match true-ups and non-elective contributions, as well as check against limits and calculate refunds. It is available on the new DC tab in the Database Editor, or on the Tools branch of the navigation tree in US Qualified and US Public pension plan modes.

The tool operates on an employee database, reading basic census information, compensation, and deferrals, and writing individual results to that same database. The provisions of the plan are defined using a DC Plan Definition. During the calculation, ProVal will apply any regulatory limits you have elected to apply, adjusting contributions accordingly.

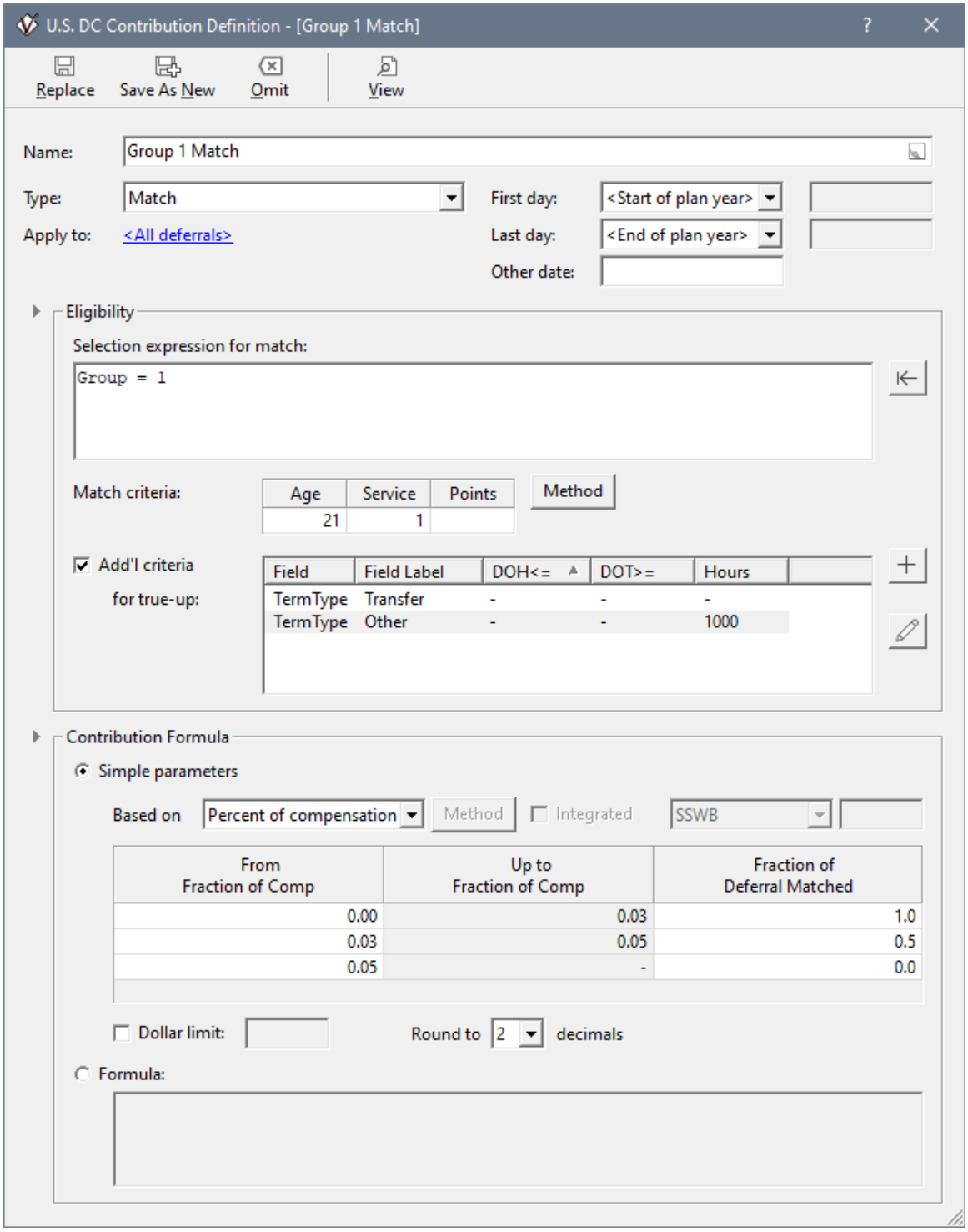


The Plan Definition is a collection of Contribution Definitions which you create. You can have any number of Contribution Definitions, to reflect various contribution formulas and eligibility rules.

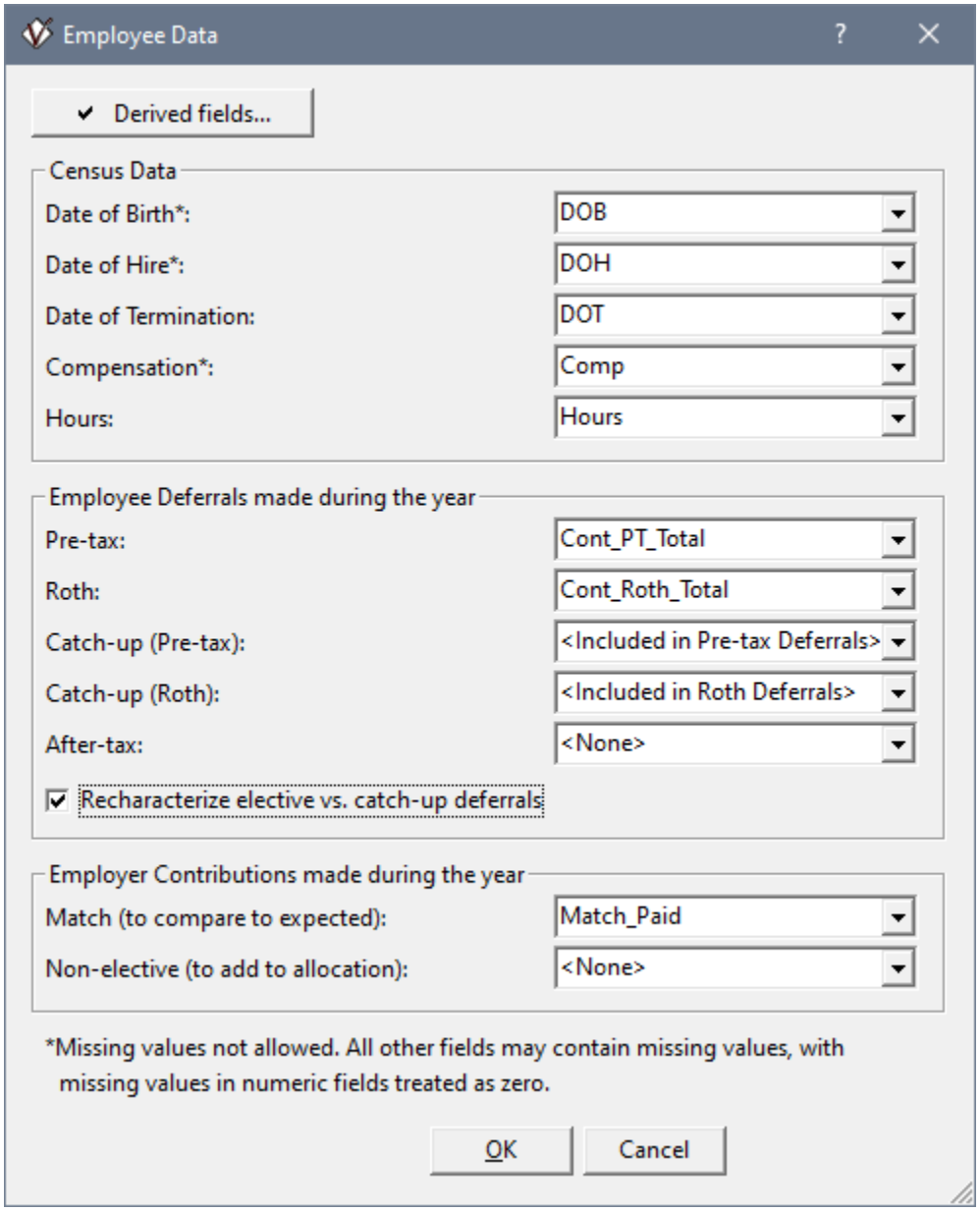


Contribution Definitions are of two types: Match or Non-elective. A Match-type contribution has a formula that is based on employee deferrals. During the run, ProVal will evaluate the expected match, compare it to the actual match paid by the employer, and calculate the true-up amount for those eligible. A Non-elective contribution has a formula based on age, service, points, or a percentage of compensation.

For example, below is the set-up for a Match contribution of 100% of deferrals up to the first 3% of pay and 50% of the next 2% of pay. Employees must be 21 with 1 year of service to be eligible for this match. To be eligible for a true-up in this example, employees who terminated with a reason other than Transfer need to have worked 1000 hours, whereas transferred employees and those who did not terminate have no further restrictions.



The Employee Data topic is where you indicate which fields in your database contain basic data items such as date of birth, compensation, and contribution amounts. You can also indicate whether ProVal should automatically recharacterize elective versus catch-up deferrals. In addition, if there are data calculations you wish to carry out at the beginning of the allocation run, you can include those calculations using the “Derived fields…” button.



Once your setup is complete, running the allocation will carry out the calculation and write out to the database whatever results you have selected in the Individual Results topic. This could include expected match, true-up, non-elective contributions, recharacterizations, and refunds, as well as intermediate values such as eligibility flags, regulatory limits, limited deferrals, and others. These are provided to give enough detail for you to check results.

Another way to check results is to run Sample Lives. ProVal will display all the details of the calculation for any record you choose, providing a Summary report, as well as detailed reports for various stages of the calculation.