

# ReGenesees

<b>1. Software name:</b>	ReGenesees (R Evolved Generalised Software for Sampling Estimates and Errors in Surveys)
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<p><b>3. Main purpose of the software:</b></p>	<p>ReGenesees is an R-based, full-fledged software system for design-based and model-assisted analysis of complex sample surveys. ReGenesees has a clear-cut two-layer architecture: the application layer of the system is embedded into an R package named itself ReGenesees. A second R package, called ReGenesees.GUI, implements the presentation layer of the system (a user friendly mouse-click GUI).</p> <p>Main Statistical Functions:</p> <ul style="list-style-type: none"> <li>&gt; Complex Sampling Designs <ul style="list-style-type: none"> <li>• Multistage, stratified, clustered, sampling designs</li> <li>• Unequally weighted sampling, with or without replacement</li> <li>• “Mixed” sampling designs (i.e. with both SelfRepresenting and NonSelfRepresenting strata)</li> </ul> </li> <li>&gt; Calibration <ul style="list-style-type: none"> <li>• Global and/or partitioned (for factorizable calibration models)</li> <li>• Unit-level and/or cluster-level adjustment</li> <li>• Homoscedastic and/or Heteroscedastic models</li> </ul> </li> <li>&gt; Basic Estimators <ul style="list-style-type: none"> <li>• Horvitz-Thompson</li> <li>• Calibration Estimators</li> </ul> </li> <li>&gt; Sampling Variance Estimation <ul style="list-style-type: none"> <li>• Multistage formulation (via Bellhouse recursive algorithm)</li> <li>• Ultimate-Cluster approximation</li> <li>• Taylor-linearization for nonlinear “smooth” estimators</li> <li>• Collapse strata technique for handling lonely PSUs</li> </ul> </li> <li>&gt; Estimates and Sampling Errors (standard errors, variance, coefficient of variation, confidence interval, design effect) for: <ul style="list-style-type: none"> <li>• Totals</li> <li>• Means</li> <li>• Absolute and/or relative frequency distributions (marginal, conditional and joint)</li> <li>• Ratios between totals</li> <li>• Multiple regression coefficients</li> <li>• Quantiles (variance estimation via the Woodruff method)</li> </ul> </li> <li>&gt; Estimates and Sampling Errors for Complex Estimators <ul style="list-style-type: none"> <li>• Handles arbitrary differentiable functions of Horvitz-Thompson or Calibration estimators</li> <li>• Complex Estimators can be freely defined by the user</li> <li>• Automated Taylor-linearization</li> <li>• Design covariance and correlation between Complex Estimators</li> </ul> </li> <li>&gt; Estimates and Sampling Errors for Subpopulations (Domains)</li> </ul>
<p><b>4. Level of importance:</b></p>	<p>Strategic</p>
<p><b>5. Input format(s) (e.g. csv, xml,...):</b></p>	<p>Delimited (csv, txt), RDBMS tables, MS Access tables, MS Excel spreadsheets</p>

<b>6. Output format(s) (e.g. csv, xml,...):</b>	Delimited (csv, txt), RDBMS tables, MS Access tables, MS Excel spreadsheets
<b>7. Programming language(s):</b>	R
<b>8. Code availability:</b>	Open source
<b>9. Charges:</b>	Free of charge
<b>10. Development status:</b>	Production/stable <ul style="list-style-type: none"> <li>• Current Version: 1.5</li> </ul>
<b>11. Operating system(s):</b>	Windows, Linux, Mac
<b>12. User/natural language:</b>	English
<b>13. Demo/trial version available?:</b>	Yes
<b>14. Do you provide training and/or consultancy for this software for other organisations?:</b>	Yes
<b>15. Do you provide support for this software for other organisations?:</b>	Yes
<b>16. Does detailed documentation exist for developers?:</b>	
<b>17. Does detailed documentation exist for users of the software?:</b>	Yes
<b>18. In which language(s) is the documentation available?:</b>	English
<b>19. Please provide a link to any documentation available online:</b>	JOINUP (The European Commission repository for open source software): <a href="https://joinup.ec.europa.eu/software/regenesees/description">https://joinup.ec.europa.eu/software/regenesees/description</a>
<b>20. Other documentation (please upload attachments or give details):</b>	ISTAT official site: <a href="http://www.istat.it/it/strumenti/metodi-e-software/software/regenesees">http://www.istat.it/it/strumenti/metodi-e-software/software/regenesees</a>  JOINUP (The European Commission open source software repository): <a href="https://joinup.ec.europa.eu/software/regenesees/description">https://joinup.ec.europa.eu/software/regenesees/description</a>
<b>21. Please list other statistical organisations that are known to use this software:</b>	The Scottish Government, ONS
<b>22. Other information:</b>	
<b>23. Is the software compliant with the HLG vision?*</b>	fully
<b>24. In which areas is the software compliant with the HLG compliance criteria?:</b>	capable of being used in 'plug and play' architecture complies with guidelines for multi-lingual applications supports input and output of data & metadata in open format

*\*Click here for details of the criteria for compliance with the HLG vision. (Owners of software have the primary responsibility for deciding whether software meets the criteria. However, in cases of disagreement the Sharing Advisory Board will adjudicate.)*

If you are familiar with the phases and sub-processes of the [Generic Statistical Business Process Model](#), please add labels to this page to categorise the software, using the 'Edit labels' option at the bottom left of the screen. Please choose from the existing labels e.g. 'gsbpm4\_1' for GSBPM 4.1, 'select sample'. You can view the full list of phases and sub-processes [here](#).

Other users of this software are encouraged to evaluate it and share their experiences using the comment option on this wiki page, or by e-mail to [support.stat@unece.org](mailto:support.stat@unece.org)