

LISE++ Development Summary

Versions 18.4.11 through 18.5.0

This document summarizes the recorded LISE++ modifications from version 18.4.11 (29 May 2026) through version 18.5.0 (25 July 2026). It preserves the version sequence while consolidating multi-line source comments into readable entries.

Executive Summary

- 18.4.11-18.4.32: **AA excitation-energy, Langevin framework, dBE fitting**, transmission/statistics, half-life, and data-table work.
- 18.4.33-18.4.60: **initial integration of the ARIS Prompt Radiation utility**, monitor maps, direct LISE++ data exchange, detailed reporting, global settings, and preparation for Phase 2.
- 18.4.61-18.4.69: **silent-mode expansion**, charge-state gauge suppression, and construction of temporary Step 2 Finger/material blocks.
- 18.4.70-18.4.79: **Phase 2** graph/configuration refinement, phase-aware reporting, manual restore commands, merged monitor totals, and protected internal access.
- 18.5.0: middle version advanced to 18.5.

Detailed Version Log

Version	Date	Summary
18.4.11	05/29/26	AA Excitation Energy dialog: help button on IME
18.4.12	06/09/26	Splitting o_Element.h to new files (Regl, SCellment, Proj, ..)
18.4.13	06/10/26	menu "Reaction Dynamics Explorer" start for Langevin dynamics void on_actionReaction_Dynamics_Explorer_triggered();
18.4.14	06/10/26	d_Langevin framework : ui, cpp, h
18.4.15	06/12/26	revision (file relocation) in d_Utilites
18.4.16	06/12/26	REJECTED: inserted ReactionNew *reaction into ReactionCinematique
18.4.17	06/12/26	Celement:: Matom() --> Matom_u() new function Matom_MeV()
18.4.18	06/12/26	REJECTED: optimization of d_Langevin based on Cinematics->reaction and new function Matom_MeV()
18.4.19	06/12/26	Langevin dynamics figure in dialog. Slot to show this figure in LISE Image Viewer
18.4.20	06/14/26	this modification was rejected -- RelativElement::SetEx -- use Matom instead Mnucl
18.4.21	06/15/26	preventing warning qt.core.qobject.connect: QObject::connect: No such slot TMonitorDlg::Send_ChooseFromIsoTable()
18.4.22	06/15/26	Langevin dynamics: Share excitation energy between residuals
18.4.23	06/15/26	dBE_settings: implementation of options to use k1,k2, and b in minimization
18.4.24	06/18/26	REJECTED: new project option for fast calculations
18.4.25	06/19/26	manual restoration from version 18.4.11a to avoid slow calculation. NO 18.4.16
18.4.26	06/19/26	A/q, A-2q, A-3q values for Z-q=0,1,2 in W_ShowCalc Overall isotope transmission format in W_ShowCalc

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18.4.27	06/19/26	T1/2 calc in W_ShowCalc (Transmission statistics window)
18.4.28	06/20/26	Kinematic calculator -- Diff.cross section converter for Rutherford button
18.4.29	06/20/26	update half-life calc for delay block and lise statistics Zero T1/2 if S1n<0 and S2n<0 update half-life calc for L_Lisefile
18.4.30	06/20/26	L_Lisefile -> Results -> Transmission take into account Faraday Cup new column "Decay Mode"
18.4.31	06/20/26	78Kr, 124Xe BAM CS were included in the package
18.4.32	06/22/26	recent RIKEN "discoveries" with a 208Pb were implented in the table of nuclides
18.4.33	07/17/26	starting ARIS radiation analysis -- main menu
18.4.34	07/18/26	implementation of PromptRadiation in the package
18.4.35	07/18/26	Update of MainWindow_InitDir for the Radiation folder in the package
18.4.36	07/18/26	Monitor location map in the Prompt Radiation utility
18.4.37	07/18/26	Update of Monitor locations and description
18.4.38	07/18/26	font and styles in the Prompt radiation mainwindow run LISE calculations button (F5) in in the Prompt radiation utility icon for ARIS radiation analysis in LISE++ global menu
18.4.39	07/19/26	new function BLOCK* GetBlockFromPrivateName(const QString& name,bool enabledOnly,bool stopAtFaraday);
18.4.40	07/19/26	new file w_Graph_PromptRadiation.cpp -> new slot: void MainWindow::CmPlotRadUtility()
18.4.41	07/19/26	split MainWindow_PR to w_Main_promptRad.cpp and w_Main_promptRad_Run.cpp
18.4.42	07/19/26	Started development of the direct signal exchange between the Prompt Radiation utility and the main LISE++ calculation module. The utility now sends the selected block name and rate threshold to the LISE++ MainWindow module through a Qt signal. The main LISE++ module performs the prompt-radiation calculation for the requested block and will return a structured array of isotope information back to the utility. The planned returned data include: A, Z, q_after_target, q_after_wedge, reaction mechanism, energy, sigmaE, rate, X-position/zone This approach avoids using intermediate text files and provides a cleaner internal interface between the GUI utility and LISE++ calculations. Initial work was also done on the plotting side. A reduced Prompt Radiation plot routine was derived from the existing CmPlotAll() logic, keeping only the required scBeam X-position distribution after the selected block. The routine creates a temporary Faraday cup after the requested block, recalculates the beam/fragment distributions, plots the X distribution, and then restores the previous LISE++ calculation state. The plot is currently used both for visual verification and as the source for future X-boundary/zone analysis.
18.4.43	07/19/26	new function bool distribution::intpart_accurate_statistics(double a, double b, bool FlagLog, double& area,double& mean,double& sigma)
18.4.44	07/19/26	accurate splitting X distribution in db0 using intpart_accurate_statistics
18.4.45	07/20/26	calculation monitor values
18.4.46	07/20/26	implementation of showDetails global variable in the Prompt Radiation utility
18.4.47	07/20/26	Detail table if showDetails==true in the Prompt Radiation utility
18.4.48	07/20/26	working on format in result outputs, data sorting, Element names
18.4.49	07/20/26	new function in Transmission: bool checkRateOverThreshold(...)
18.4.50	07/20/26	file L_Trans.cpp has been split to L_Trans.cpp and L_Trans_TRfunctions.cpp implementation of new file "L_Trans/L_Trans_private.h"

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18.4.51	07/20/26	IMPORTANT: L_Trans was modified for optimization: after each block analysis on current rate below threshold
18.4.52	07/20/26	new monitor location map v.12
18.4.53	07/21/26	time stamps for Prompt Radiation calculation
18.4.54	07/22/26	New global variables in the Prompt Radiation calculator RowMomentumSlits, RowWedge, RowFragCatcherSlits
18.4.55	07/23/26	w_Main_Prompt* renamed to w_Prompt* LISEpro has been modified to exclude PromptRad.pri
18.4.56	07/23/26	Prompt Radiation calculator: check existence of LISE configuration blocks RowMomentumSlits, RowWedge, RowFragCatcherSlits
18.4.57	07/23/26	New global variable in the Prompt Radiation calculator ShowXPlots
18.4.58	07/23/26	LISEcute.pro uses local clone install folders for MinGW and MSVC builds _install, _install_MSVC, _symbols
18.4.59	07/23/26	Prompt Radiation calculator respects ShowXPlots during X-distribution calculation No: calculate rows without opening the graph window
18.4.60	07/23/26	Prompt Radiation Step 2 prepares pointers to LISE configuration blocks RowMomentumSlits, RowWedge, RowFragCatcherSlits
18.4.61	07/24/26	new key for the silent mode: -calcAll -- calculate transmission of all nuclei implementation started with main.cpp and struct LISEstart_t
18.4.62	07/24/26	Silent mode support in CmTransAll no confirmation dialog, gauge, sound, status-bar updates, or elapsed-time dialog
18.4.63	07/24/26	Silent mode suppresses charge-state calculation gauges charge states transmission and charge state optimization
18.4.64	07/24/26	Simplified constructors for material and dipole blocks BLOCK_M and BLOCK_D now set their block types internally
18.4.65	07/24/26	Prompt Radiation Step 2 LISE configuration work continued temporary comment block added around restoration/delete operations
18.4.66	07/24/26	Prompt Radiation Step 2 temporary material configuration updated Cu and Cr are assigned with SetZ(..., false); saved temporary comment marker found
18.4.67	07/24/26	Restored original BLOCK_M and BLOCK_D constructor interfaces material and dipole block constructors again accept the block type argument
18.4.68	07/24/26	Prompt Radiation Step 2 temporary configuration advanced temporary Finger/material blocks configured;
18.4.69	07/24/26	header inline-function }; warnings cleaned
18.4.70	07/24/26	Prompt Radiation Step 2 graph block cleanup duplicated Phase 1 names renamed in graph2; left stop-location zones updated with _L suffixes
18.4.71	07/25/26	Prompt Radiation Step 2 graph handling updated graph2 is skipped without returning when CmPlotTest() fails
18.4.72	07/25/26	Prompt Radiation global Phase Calc setting added phase 1 and phase 2 rows are emitted with separate signals
18.4.73	07/25/26	Prompt Radiation configuration menu commands added manual phase 1 restore and phase 2 temporary LISE configuration slots
18.4.74	07/25/26	Prompt Radiation Step 2 configuration refactored CmPlotRadUtlity now uses the phase 2 configuration slot

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18.4.75	07/25/26	Prompt Radiation phase 1 configuration updated Faraday cup insertion moved into CmPromptRadiationMakeConfigurationPhase1
18.4.76	07/25/26	Prompt Radiation temporary configuration updated Faraday cup insertion is shared by phase 1 and phase 2
18.4.77	07/25/26	Prompt Radiation utility menu updated Restore Original Configuration command added after phase 2 configuration
18.4.78	07/25/26	Prompt Radiation LISE row reporting updated debug table titles show phase number; final monitor totals and merged N0318 contributors are printed for phases 1+2
18.4.79	07/25/26	ARIS Radiation Analysis utility access updated password dialog added before opening the internal Prompt Radiation utility
18.5.0	07/25/26	middle version has been changed

Prompt Radiation Milestones

Version range	Development milestone
18.4.33-18.4.38	Utility entry point, package integration, monitor map, styles, F5 calculation command, and menu icon.
18.4.39-18.4.44	Block lookup, direct plotting/data exchange, and accurate DB0 X-distribution splitting.
18.4.45-18.4.54	Monitor totals, detailed tables, optimized threshold handling, map v.12, time stamps, and three configurable block names.
18.4.55-18.4.60	Project/source reorganization, block validation, ShowXPlots, and Step 2 block pointers.
18.4.61-18.4.69	Silent Calculate All support and temporary Phase 2 Finger/material construction.
18.4.70-18.4.78	Stopping-zone labels, phase selection, configuration/restore commands, shared Faraday cup, and merged Phase 1+2 reporting.
18.4.79-18.5.0	Internal access protection and promotion to version 18.5.

Source: lise_version.h, current header declaration Version 18.5.0, last revision 25-JUL-2026.