

Product RoadMap

The first open-source release of DSpace-CRIS was based on DSpace 1.8.2. Current releases of DSpace-CRIS are based on current DSpace 7.6.1.

Current release



The latest release is [DSpace-CRIS 7 2023.02.03](#) dated *March, 29th 2024*

This version, released on the February 9th 2024, provides minor improvements and bug fixing.

For previous DSpace versions the latest available tags are [5.11](#) and [6.4](#) both released on the August, 30th 2022 just after the release of the corresponding DSpace 6.4 and/or 5.11. Please note that all the DSpace-CRIS versions based on DSpace versions older than 7.0 are End of Life (EOL) according to the corresponding DSpace announcement: [Support for DSpace 5 and 6 is ending in 2023](#)

Below there is a detailed release plan covering all the known features contributed by 4Science and other community members who support the enhancement of this open-source extension of DSpace (see: [DSpace-CRIS Working Group](#)).

A visit to the community page maintained by DSpace-CRIS users is also recommended: <https://wiki.duraspace.org/display/DSPACECRIS/New+Features>.

New functionalities are only developed for DSpace-CRIS 7.

Versioning & support model

Starting from DSpace-CRIS 7 the project has adopted its own versioning model to assure accurate tagging and tracking of the changes across the different releases. Version numbers will use the following schema year.major.minor. The major number will reset to 01 each year, minor numbers start from 00, for example 2021.01.00, 2021.01.01, 2021.02.00, 2022.01.00, etc.

- *Minor versions* are expected to be easier to upgrade to, REST API is guaranteed to be backward compatible;
- *Major versions* are used to highlight important functional or breaking changes. The changelog will highlight the new features, the configuration and REST API changes and the version of the plain DSpace that is used as basis;
- *Year versions* are assumed to be major. Minor versions related to the previous year can still occur for security fix.

The latest version is actively maintained by [4Science](#) and community members as volunteer work. Support for past versions will be based on availability of resources and funding from the community. Security fixes will be brought to the current version and the previous major if the current version is a new one (i.e. minor = 00). For example if version 2021.02.00 is the current one, security fixes will be released for both 2021 major 01 and 02, i.e. version 2021.01.01 and 2021.02.01 will be released. Once version 2021.02.01 will be out, security fixes will come as 2021.02.02.

DSpace-CRIS and DSpace releases are independent, the plain DSpace version used as basis for a DSpace-CRIS version will be noted in the changelog. But, whenever appropriate, it will be possible to release an official DSpace-CRIS version based on a DSpace unreleased version (as it was the case for the first DSpace-CRIS 7.0 release). In such situations, the DSpace-CRIS development team will have reviewed the known issues in DSpace and provided custom remediation, workarounds or alternative functionalities to support the relevant use cases. Some limitations can also be acceptable and just noted in the release notes as they may impact edge scenarios or a limited users' base.

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 - Other
- 2018/2019
- 2017
- 2016
 - 5.6 (released on November 16th, 2016 - [click here to browse the code on github](#)) / include the release of DSpace-CKAN integration module
 - 5.5 (released on March 27th, 2016 - [click here to browse the code on github](#))
- 2015
 - 5.3 (released on August 15th, 2015 - [click here to browse the code on github](#))
 - 5.2.1 (released on July 24th, 2015 - [click here to browse the code on github](#))
 - 5.2 (released on May 25th, 2015 - [click here to browse the code on github](#))
 - 4.3 (released on Apr 15th, 2015 - [click here to browse the code on github](#))
 - 4.2 (released on Mar 11th, 2015 - [click here to browse the code on github](#))
- 2014
 - 4.1.2 (released on Jul 12th, 2014 - [click here to browse the code on github](#))
 - 4.1.1 (released on Jun 28th, 2014 - [click here to browse the code on github](#))
 - 4.1.0 (released on Jun 13rd, 2014 - [click here to browse the code on github](#))
- 2013
 - 1.8.3-beta (released on Sep 6th, 2013 - [click here to browse the code on github](#))
 - 3.2.0-beta (first draft on Jul 31, 2013 - released on Aug 3rd, 2013 - [click here to browse the code on github](#))
 - 1.8.2.1-beta (released on July 24th, 2013 - [click here to browse the code on github](#))
 - 1.8.2.0-beta (released on June 24th, 2013 - [click here to browse the code on github](#))
 - 1.8.2.0-alpha1 (unreleased, available on github since February 4th, 2013)
- 2012
 - 1.8.2.0-alpha (released on November 26th, 2012)

Releases

The first production-ready DSpace-CRIS 7.0 was released on 2nd June 2021. The version supports the key use cases and the most demanded features of DSpace-CRIS according to the priorities defined by the community of users ([DSpace-CRIS User Group](#)). The first version of DSpace-CRIS 7.0 addressed priorities 1 and 2 with contributions from supporting institutions (resource effort and/or funding) and volunteer work by 4Science (more than 3,000 hours in 2020 and 2021 on top of what 4Science provided for the plain DSpace 7). The [original development plan](#) is available here but it is not longer used to track progress and future plan that are instead described in the [Product RoadMap](#) and agreed within the [DSpace-CRIS User Group](#).

Current development

With regard to the roadmaps of DSpace and DSpace-CRIS they are still separated due to the significant amount of extra functionalities of DSpace-CRIS that is not possible to quickly give back to plain DSpace yet. From time to time features are contributed back / ported to DSpace and the DSpace-CRIS community aims to keep the two projects as closer as possible eventually rejoining them.

DSpace-CRIS is developed in the branches named dspace-cris-7 in the [REST API](#), [Angular](#) and [Rest contract](#) repositories maintained by 4Science. The development of DSpace-CRIS closely follows the deploy of the official DSpace and new developments from the mainstream are generally merged in DSpace-CRIS within 1-2 weeks. The code is now very stable and there are many projects already running this codebase in production.

DSpace-CRIS 7 moves the CRIS objects to the DSpace items with the extended concept of Configurable Entities, maintaining the Authority Framework as an efficient, flexible, performant way to manage relations among objects, successfully used in hundreds of [real installations around the world](#) since more than 10 years.

DSpace-CRIS 7 has many additional features and tailored procedure that enhance the UX and are not available in DSpace 7, some key points are:

- Processes tailored to the entity types
- Many additional data providers
- Support for structured metadata, ternary relationships and nested metadata
- Configurable layout for entities in tabs and boxes
- ORCID v3 complete integration (pull and push of profile information, publications, projects, employments, qualification)
- Management of personal profiles
- Granular permissions at metadata level
- Enhanced statistics visualization, reports, export capabilities including CVs in PDF, citation lists according to the [CSL](#), and much more.

Please check the release notes of each DSpace-CRIS version and the [technical documentation](#) for more details.

A presentation of the newly released DSpace-CRIS was given at Open Repositories:

slides: <http://doi.org/10.5281/zenodo.4923701>. Video: <https://youtu.be/8jgn0h38Zr8?t=3857> (starting at: 1h 03' 55").

Next releases

DSpace-CRIS 2023.02.04 is expected by summer of 2024 if no urgent issues are reported first.

- Update the correction and suggestion services with the result of the Openaire ELD Advanced project <https://eosc-dih.eu/eld-advance/> (postponed from 2023.02.00 to wait for review of the corresponding plain DSpace PRs)
- Enhanced Signposting <https://signposting.org/> support for DSpace-CRIS
- Improved Audit System: who, what, when with details up to which metadata has been changed from which value to which value
- Support for multilanguage hierarchical metadata: currently metadata within a nested (i.e. Orgunit name of an affiliation, role, etc.) are not shown according to the current UI language
- Mechanism to track check / timestamp outside of metadata: several features need to store a timestamp as a technical metadata on the item to allow incremental processing. This is the case for example for bibliometric update, bibliographic scan, sync procedures. We will introduce a dedicated mechanism outside of metadata to avoid "update" of the item when not strictly needed
- Administer mode to edit metadata of any DSpace Object (Community, Collection, Bundle, Bitstream, EPerson, Group)
- Expose relation over the SPARQL/RDF endpoint
- Upgrade to the Datacite schema version 4.5

DSpace-CRIS 2024.01.00 by April (not to use in production)

- COAR Notify
- based on a DSpace 8.0-snapshot commit t.b.d.

DSpace-CRIS 2024.02.00 by Sept (stable and production ready)

- aligned to DSpace 8.0

Unspecified versions (looking for funders / contributors)

- Authorship Claim: provide a way for an user to claim its role over a publication, project, etc. (previously named publication/item claim in DSpace-CRIS 5 renamed as it collides with a different feature introduced in DSpace 8)
- FAIRiCat <https://signposting.org/FAIRiCat/>
- Resourcesync
- collecting the contributor Roles (CrediT support)
- Enforce validation and management of hierarchical metadata via an application profile also in the administer mode and over the API (PUT)
- Collect metrics from the OpenCitation
- Integrate OpenAlex as a live and suggestion provider

2024

DSpace-CRIS 7 2023.02.03 March, 29th

This version, released on the 29th of March 2024, provides minor improvements and bug fixing.

Key Enhancements

- When linking a page of the repository, the use of a language can now be forced with a URL parameter (e.g lang=it)
- Added the Communities and Collections section to the Admin menu for collection administrators when the section is not shown in the Navigation bar
- Added a setting to enable/disable the Mirador download plugin. It is enabled by default
- In items lists, thumbnails are embedded to avoid extra calls and slowdowns
- Improved the responsiveness of metrics badge pop-ups on smaller screens
- Added support for template Item in the struct builder script/configuration
- Added configurable metadata of index-able item bitstreams on Solr
- Lucky-search configuration now supports also redirect to specific bitstream allowing to preserve URL of individual files moving from other platform to DSpace (i.e. EPrints)
- DOIOrganiser performance improved
- Allowed administrators to always perform PUT/Patches operations over items (in progress or archived)
- Improved the performance of the item-enhancer script
- Display the current metrics consents text for each badge
- Implement component to visualize current consents for metrics badges in a compact way
- Introduced the relatedItemMetadataFields attribute on `org.dspace.content.enhancer.impl.RelatedEntityItemEnhancer`
- The relatedItemMetadataField property in metadata-enhancer.xml now uses a list of values
- Item thumbnail preview is now disabled in MyDSpace item list
- The behavior of RelatedItemEnhancer has been updated to reduce the amount of generated metadata retaining the ability to minimize load to determine required changes when the source item or the related items (`deepMode = true`) are updated. Now only distinct sources uuid are tracked and for each source it is possible to extract/generate one or more virtual metadata values that will be all stored individual as `cris.virtual.metadata`. The place of the `cris.virtual.metadata` always match the place of the corresponding uuid / authority from which the metadata is generated and that is stored in the `cris.virtualsource`. Please note that there is no guarantee about the order of the `cris.virtualsource` values, it can differs from the order of the original metadata from which the authorities have been extracted. For example, the publication with Authors: Author1, Author2, Author3 can lead to the following virtual :
`cris.virtualsource.<qualifier> = uuid3, uuid3, uuid1, uuid2, uuid2, uuid2`
`cris.virtual.<qualifier> = value-extracted-from-author3, value2-extracted-from-author3, value-extracted-from-author1,`
`value-extracted-from-author2, value2-extracted-from-author2, value3-extracted-from-author2`
- Added support for pushing the Product entities to ORCID (*donated by floriangantner - University of Bamberg*)
- Added support for pushing the Patent entities to ORCID (*donated by floriangantner - University of Bamberg*)
- Updated deduplication configuration for the new data-quality add-on features.
- During submission, autosave is triggered by changes on dc.type by default
- Removed sortablejs library dependency

Bug

- Fixed issue for which navigating to the item page during CSR could have led to a hard redirect of the page
- Resolved the out of memory error during Angular build
- Supervised items in MyDSpace are now listed correctly
- Fixed the error appearing in Edit item update when there's no submitter
- Fixed the issue for which the authority value was not saved if controlled vocabulary was used in a not repeatable field
- Fixed bug for rendering cris-layout-configuration breaking when the rendering was set on a field without the filtering metadata
- Fixed rendering issue with item page with huge/large number of metadata
- Added the template for the subscription statistics email previously hard-coded in the script
- Fix the issue of facets disappearing in search page when a filter was selected
- Fixed issue with type-bind when dc.type is provided by a metadata enrichment
- Fixed issue with type-bind when dc.type is vocabulary controlled
- Fixed issue for which Authority was not saved for repeatable fields

DSpace-CRIS 7 2023.02.02 February, 9th

This version, released on the 9th of February 2024, provides minor improvements and bug fixing.

Key Enhancements

- Created a bootable jar to execute DSpace REST as Spring Boot application
- Added the internal routing on the counted component and improved its general appearance and behavior
- Removed the dropdown menu with SherpaRomeo suggestions when entering the title of Books
- Added support to display an alternative tab/box if the configured one is not accessible by the current user
- Added AddToAny for sharing posts on social media
- Implemented a GDPR-compliant metrics integration
 - Isolated consents for third party metrics, each of the metrics can be accepted/declined separately.
 - Script loading is conditional to allow giving consent for each metric.
 - Disabling each metric is possible on the whole environment via configuration property.
- In order to have, for ORCID, an external identifier even for orgunits like departments, with this version the orgunit hierarchy is scanned upwards, and the first identifier is used for the disambiguation
- Improved the post preview on social media when sharing it from the social buttons
- Improved the appearance of subscription emails
- The MetadataImporter was updated in order to be able to load all the registries at once, with the possibility of configuring which files must be used and without having to specify the file to use for every import
- The ItemEnhancer now avoids performing an update of an item when there are no changes in the calculated virtual metadata, even when the `deep` (previously named `force`) mode is used. This prevents triggering other consumers, such as reindexing or altering the last modification date of the item if not really needed.
- Created utility functions to handle internal and external links
- The ROR integration also shows the country when providing suggestions in a field

Bug fixes

- Using discovery configuration communityOrCollection for the item mapper in the item administrative section
- Fixed the issue that made filters in the search section not work correctly if square brackets are used
- Fixed the logo being displayed on the communities & collections pages. The logo had no maximum size
- Added tests to test the community/collection logo could be edited once set/uploaded
- The default logo was Person but the default one is now File since not every thumbnail is generally related to a Person it makes sense to have a more generic logo/thumbnail
- This technical improvement opens the opportunity for performance improvements each time that a script or other functionalities require to work over all or a large list of items.
- Restored the filters in the sidebar on the Search Results page
- Fixed the link authn error during external login (OIDC)
- Fixed the issue of not listing any community or collection when starting CSV and XLS Metadata export
- The item page resolver function was corrected in the case of a single leading tab, resolving the issue of having a stuck loading of pages
- Fix cris-layout box for bitstream type
- Removed the yellow bar on the top of the page
- Fixed the infinite scroll in the pop-up appearing when clicking the "All of DSpace" button in the search bar on MyDSpace page
- Fixed the infinite scroll in the pop-up appearing when adding an entity starting from the option in the administration menu
- Fixed the issue of the impossibility of running the filter-media process with limitations to a community or collection
- Fixed the "detect duplicate" error which prevented the depositing of an item with a correction request
- Fixed error with the process page not being correctly updated once the process ended

Based on DSpace tag [7.6.1](#) (backend) and [7.6.1](#) (front-end)

2023

DSpace-CRIS 7 2023.02.01 December, 27th

This version, released on the 27th December 2023, provides minor improvements and bug fixing.

Key Enhancements

- Added item export format to export items as zip
- Added possibility to restrict export format by groups
- Introduced new metadata to show/hide item's bitstreams using advanced-attachment
- Updated AddtoAny twitter button icon and label to X
- Added missing labels for ROR integration

Bug fixes

- Fixed issue with redirecting after Shibboleth login
- Fixed bug with read only fields within submission form

Based on DSpace tag [7.6.1](#) (backend) and [7.6.1](#) (front-end)

DSpace-CRIS 7 2023.02.00 November, 30th

This version, released on the 30th November 2023, provides alignment with DSpace 7.6.1 tag.

Upgrade instruction

The SOLR cores configuration MUST be updated with the last updates of this release.

A full SOLR reindex is recommended, the search core could contains data that are inconsistent with the updated schema.xml version. You can rebuild the index via the dspace index-discovery script.

This could be a new script to be put in crontab

Key Enhancements

- Alignment with DSpace 7.6.1 tag. See [DSpace 7.6 release notes](#) and [DSpace 7.6.1 release notes](#) for further information.
- Improved ORCID login flow. Now it is possible to complete the login process even when the ORCID account's email is private.
- Improved ORCID integration with versioned entities. Now only the last versioned item is synchronized with ORCID.
- Improved ROR integration. ROR is now exposed to datacite, it is possible to import orgunit from ROR and use the additional information like ROR id and type of orgunit to facilitate the selection of the correct orgunit.
- Now the CRIS layout tool support multiple layout for the same entity accordingly to definable custom filters.

Major improvements areas / bug fixes

- Improved application performance during SSR. Now requests for pages which contain search results are fetched on CSR only.
- Changed route behavior for CRIS item pages. First tab defined by the CRIS layout is no longer used in the item's URL. To maintain backward compatibility redirect to the main page is done automatically.
- Improved managing of metadata security toggle for nested metadata.
- Improved stability of hide and sort functionality.

- Bulk export is accessible by the admin sidebar.
- Improved sitemap generation to exclude restricted content and duplicate links for item.
- Improved performance of filter-media script

Based on DSpace tag [7.6.1](#) (backend) and [7.6.1](#) (front-end)

DSpace-CRIS 7 2023.01.01 October, 4th

Version released on 4th of October, provides minor changes and bug fixing

Key Enhancements

- Improved UI responsivity
- Dynamic Edit Mode evaluation based on custom filters
- Advanced attachments layout improvements
- Improved metric donuts layout in search
- Improved categories in statistics section

Major improvements areas / bug fixes

- Fixed search tools in mobile view
- Scopus Improvements in import & NPE prevention
- Improved Usability of small buttons in MyDspace page
- Fixed request correction feature not removing bitstreams
- Enabled the use of legacy OAI identifiers
- Fixed Live import missing mapping features for fields
- Fixed Sherpa Romeo policies changes not reflected
- Datacite schema version update (v. 4)
- Fixed APA generation with citeproc
- Fixed End User Agreement showing twice

Based on DSpace tag [7.5](#) (backend) and [7.5](#) (front-end)

DSpace-CRIS 7 2023.01.00 June, 9th

Version released on 9th of June, provides alignment with DSpace 7.5 tag. See [DSpace 7.5 release notes](#)

Key Enhancements

- Alignment with DSpace 7.5. See [DSpace 7.5 release notes](#).
- Replace AddThis as social plugin manager with [AddToAny](#)
- Export of the current cris layout configuration as a reusable xls
- Ability to configure the explore sections under hierarchical menu
- bug fixing

Major improvements areas / bug fixes

- Fixed a bug affecting special groups membership evaluation during CRIS security checks
- Added a new LimitedMetadataContributor to Live Import Framework, to limit number of metadata of the same type to be imported
- Improved Line chart visualization in statistics page reflecting the selected time interval
- AuthorityImportFilter for fundings gathering data from OpenAIRE added, Fundings related to other DSpace-CRIS Objects can be created with those gathered data
- Restored subject in sent email
- Hidden Relationships tab in Edit item page
- CMS metadata admin section improved
- Submission: dropdown values associated to blank metadata value are not stored
- Migration: fixed missing relationship values

DSpace-CRIS 7 2022.03.01 April, 21st

This version, released on the 21st April 2023, provides alignment with DSpace 7.4 tag. See [DSpace 7.4 release notes](#).

Key Enhancements

- Support for the viewer framework: to allow developer to plug viewer specialized in rendering of specific file types
- Configurable item brief view
- Increased flexibility for the Edit item configuration: support for multiple security policies, link the edit modes to the original submission form name to differentiate edit inside the same entity (i.e. edit options for a publication, a thesis, etc could be different)
- Scopus live import update
- Use the Sherpa Romeo database as an authority for journal relationship
- Automatic guessing of linked entities during import

- Advanced Attachment: cleaner visualization of the bitstreams, possibility to configure which bitstream's metadata are shown in the item page

Major improvements areas / bug fixes

- General improvements on Angular side
- Google Scholar cannot index PDF
- Fixed migration steps from DSpace CRIS 5
- Fixed errors in metadata extraction step
- LDAP Authentication box not displayed when Password Authentication is disabled

Based on DSpace tag [7.4](#) (backend) and [7.4](#) (front-end)

2022

DSpace-CRIS 7 2022.03.00 December, 30th

This version, released on the 30th Dec 2022, provides alignment with DSpace 7.4 tag. See [DSpace 7.4 release notes](#).

Key Enhancements

- Shared workspace feature: all coauthors can work on the same workspace item
- Enhanced advanced attachment item rendering, with possibility of completely hide a bitstream from item details page
- Scopus and WoS import scripts can be limited to a configurable amount of items
- Configurable crisref icons

Major improvements areas / bug fixes

- Hide/sort (management of related entities) feature
- Researcher profile creation
- Item presentation: date rendering and multi language metadata support
- Item enhancers feature
- Login redirect in case anonymous user is not authorized to see a DSpace Object
- Admin sidebar options

Based on DSpace tag [7.4](#) (backend) and [7.4](#) (front-end)

DSpace-CRIS 7 2022.02.00 September, 30th

This version, released on the 05th Oct 2022, provides alignment with DSpace 7.3 tag. See [DSpace 7.3 release notes](#)

Key Enhancements

- ORCID Authentication and synchronization. Alignment and adaptations with porting to and updates done for DSpace 7.3. See [ORCID Integration](#)
- DSpace Researcher Profile. Alignment and adaptations with porting to and updates done for DSpace 7.3. See [Researcher Profiles](#)
- Import content directly from 9 new external services including CrossRef, Scopus, Web of Science, PubMed Europe, CiNii, NASA Astrophysics Data System (ADS), [VuFind.org](#), [SciELO.org](#), and the European Patent Office (EPO). Alignment and adaptations with porting to and updates done for DSpace 7.3. See [Importing Items via basic bibliographic formats \(Endnote, BibTex, RIS, CSV, etc\) and online services \(arXiv, PubMed, CrossRef, CiNii, etc\)](#)

Major improved areas/bug fixes

Several bug fixes and improvements have been introduced in the area of:

- item layout and configurations
- fixed entity type set during item creation
- fixed attachment rendering pagination
- optimized statistics loading and scopus import script

Based on DSpace tag [7.3](#) (backend) and [7.3](#) (front-end)

DSpace-CRIS 7 2022.01.02 August, 30th

This version, released on the 30th Aug 2022, is based on DSpace 7.2.1 tag. This version provide new features, improvements and fixes for several bugs.

Key Enhancements

- Machine Token: it is now possible to generate a long lived JWT token that is independent from the session login, so that it can be used in external system to query the DSpace API without giving away your credentials. The new feature is accessible from the profile (user account) page. The machine token can be revoked by the user.
- Multi-language support: visualization of metadata values according to the UI language with fallback to the default language and available values in other languages. Multi-language support is also available in the search and browse for metadata coming from vocabularies and value pairs (dropdown)
- Manage bitstreams via the XLS BulkImport: support to edit bitstream metadata, attach, delete new files pointing to local folder configured in the server or remote location (via public ftp, sftp, http, https)

- New fresh rendering for attachments that allow a more clean visualization of the bitstream metadata

Major improved areas/bug fixes

Several bug fixes and improvements have been introduced in the area of

- submission: type-bind, controlled-vocabularies, lookup, support for different upload panel in different collections
- edit submission mode: change bitstream policies, configure a single mode for the access and upload step to make the UI simpler
- statistics: improvement to the navigation among the pages and much more, please refers to the commit history for details.

Based on DSpace tag [7.2.1](#) (backend) and [7.2 - .1 not released for angular](#) (front-end)

DSpace-CRIS 6.4.0 August, 30th

This is probably the last release of DSpace-CRIS based on DSpace 6. It is aligned with the official DSpace 6.4 tag

DSpace-CRIS 5.11.0 August, 30th

This is probably the last release of DSpace-CRIS based on DSpace 5. It is aligned with the official DSpace 5.11 tag

DSpace-CRIS 7 2022.01.01 April, 6th

This version, released on the 6th Apr 2022, is aligned with DSpace 7.2.1 tag, which includes a security update for [CVE-2022-22965](#) (Spring4Shell critical vulnerability). This version includes updates in metrics presentation and graphical facets. Several bugs have been resolved.

Key Enhancements

- Security update to mitigate [CVE-2022-22965](#) (Spring4Shell critical vulnerability).
- Improved metrics visualization
- Added new features (legend, x and y switch) to graphical facets

Architecture

- Aligned with DSpace 7.2.1 tag

Data presentation

- Metrics default visualization improved
- Number of items in TopComponents can be customized
- Added possibility to have legends for graphs x and y axis
- Added possibility to have a graph with x and y axis switched
- Context menu is not displayed when no menu entries are available for the current user

Data security

- [CVE-2022-22965](#) (Spring4Shell critical vulnerability) mitigation

Other

- Added type field to administrator bitstream edit page
- Fixed several bugs.

Based on DSpace commits [f863866](#) (backend) and [e4f483c](#) (front-end)

DSpace-CRIS 7 2022.01.00 March, 2nd

This version, released on the 2nd Mar 2022, is aligned with DSpace 7.2 tag. New functionalities have been provided like new renderings, the possibility of setting a custom-url for an Item, new statistics sections. Several minor, not blocking, bugs have been resolved

Key Enhancements

- Added new renderings to matrix layout
- One or more custom-url(s) can be set for DSpace-CRIS 7 entities
- Site, Login, Workflow statistics sections
- COAR resource type vocabularies updated to v. 3.0

Architecture

- Aligned with DSpace 7.2 tag

Data presentation

- Frequent actions available in Item's page as buttons
- CRIS components top-sections and counter-section can be themed
- New email rendering subtype (link.email)
- Vertical layout as default
- Scopus and researcherid added as subtypes for 'identifier' rendering
- Most downloaded items in statistics
- Added unique I18n keys to CRIS layout tabs and boxes names
- IIIF viewer rendering in matrix layout

Data security

- Improved validation to layout configuration tool file when uploaded

Other

- Custom url can be defined for DSpace-CRIS entities
- Bulk Export in 2 steps: 1. selection of Entity 2. Selection of format
- Site, Workflow and Login statistics
- Improved Pentaho migration scripts to migrate bitstream metadata values and statistics
- Pentaho job to migrate statistics from previous DSpace-CRIS 5 to DSpace-CRIS 7
- ORCID link
- Item versioning option available in Item's context menu
- Fixed recipient(s) can be used to test functionalities sending emails
- Scopus view modes parameter, to be used by this integration, configurable
- COAR Resource Type vocabulary updated to v. 3.0

2021

DSpace-CRIS 7 2021.03.00 December, 30th

This version, released on the 30th Dec 2021, provides a new way of rendering an Item detail page, possibility of adding custom html fragments in home page, share functionality. Search and browsing performances have been improved, and further checks have been added to improve security and prevent the saving of Items in an invalid state when edited. Details of this release are reported below.

Key Enhancements

- New Item Detail page based on the concept of matrix layout (see notes and presentations from the [WG meetings](#) in December and November)
- Enforced metadata profile in no-administrative edit screens (prevent to save change to item with invalid or missing mandatory metadata)
- Edit of html fragments in the home page
- Share on social networks via addthis
- Several minor bugs fixed

Architecture

- Aligned with DSpace 7 community last improvement, with a preview of several features of 7.2 tag
- performance improvements in browsing and search listing

Data presentation

- new Item Detail page, with matrix layout
- Hide the bitstream list in the item page when no bitstreams are available
- Provided a standard and semi automatic way to define i18n keys for item layout pages
- Filters and facets can be built using display value for metadata set using lists or controlled vocabularies
- Extended valuepair rendering to metadata defined via a controlled vocabulary
- Layout configuration performed via DSpace-CRIS 7 process or CLI command

Data security

- Items cannot be saved in an invalid state
- Item security evaluation when exporting in csv or xls.

Other

- Invitation to join groups

Release based on DSpace commits [dbede2b](#) (backend) and [7abdceb](#) (front-end)

DSpace-CRIS 7 2021.02.02 December, 14th

The key changes in this version, released on the 14th Dec 2021, relate to alignment with DSpace 7.1.1

This is an updated version of the `dspace-cris-2021.02.01`, aligned with DSpace 7.1.1 release, which includes a security update for [CVE-2021-44228](#) (log4j v2 critical vulnerability). It is fully compatible with the DSpace-CRIS 7 Frontend `dspace-cris-2021.02.01` release.

We highly recommend ALL users of DSpace-CRIS 2021.01.x or 2021.02.x upgrade to `cris-2021.02.02` to resolve [CVE-2021-44228](#).

To fully protect your DSpace-CRIS 2021.x site from [CVE-2021-44228](#), three steps are required:

1. Upgrade your DSpace-CRIS backend to 2021.02.02 OR manually install [#8065](#), rebuild and redeploy your DSpace-CRIS backend. Make sure to restart your Tomcat after the update.
2. Upgrade to Apache Solr v8.11.1 (or above), **OR** ensure that `-Dlog4j2.formatMsgNoLookups=true` is specified in your `SOLR_OPTS` environment variable. For more information, see [Solr™ Security News](#)
3. If you use the [Handle.Net Registry Support](#) in DSpace-CRIS 2021.x, make sure to restart your Handle Server (after performing step 1), so that it uses the new (secure) version of log4j as well.

For the technical documentation please refers to the [dspace-cris 2021.02.01 release notes](#)

DSpace-CRIS 7 2021.02.01 November, 11th

The key changes in this release relate to alignment with **DSpace 7.1 tag**. Some additional nice features have been also introduced, see below for details

Key Enhancements

- Alignment with DSpace 7.1 tag
- Performance improvements

Architecture

- Aligned with DSpace 7.1 tag, several bugs have been resolved

Data migration

- Added redirection from the legacy CRIS 5 details page to the new CRIS 7 details page

Data presentation

- MyDSpace is now updated when a task is claimed
- Allowed to use of graphical facets in home page and explore sections
- Added PlumX widget for publication and person metrics
- Hide relations box if the content is empty
- Provided a valuepair rendering type for the item detail

Data quality & accuracy

- Added the possibility to replace metadata value when item reference is resolved

Data security

- Metrics boxes does not appear if the current user has no rights to see them
- Allowed to turnoff completely the end user agreement
- Prevented patch and put of item metadata if user is not allowed

Other

- Fixed the partially breaking of the reset password feature when usage terms are not yet accepted
- Admin is now able to reset other user's password

DSpace-CRIS 7 2021.02.00 October, 27th

This version is aligned with **DSpace 7.0 tag**. It improves the stability of the platform and provide a better support for users migrating from DSpace-CRIS 5. Some additional nice features have been also introduced, see below for details

Key Enhancements

- Subscription feature: functionality that allows you to receive updates on specific dspace objects
- Introduced lucky search
- Migration from DSpace-CRIS 5 improved (migrate ORCID tokens, metadata values language and boolean values)
- Allow anonymous user to export items and search results

Architecture

- Aligned with DSpace 7.0 tag, several bugs have been resolved

Data presentation

- Added tag rendering
- Entity name translation in MyDSpace dropdown
- Sorted user's processes by id
- Improved statistics map rendering with country name localized
- Fixed manage of newline flag for box conftool configuration

Interoperability

- Introduced an OpenID authentication provider

Data security

- Defined item_admin, submitter, submitter_group and group security levels for edit/correction modes
- Extended item export to evaluate security context while extracting metadata

DSpace-CRIS 7 2021.01.01 August, 11th

This is a minor release, no breaking changes have been introduced. This version is aligned with DSpace 7.0 tag, which carries several fixes of bugs present in previous SNAPSHOT version.

Key Enhancements

- Metadata security: it is possible to define at different levels (general, entity, metadata) if a metadata value, configured to be displayed in layout configuration, is accessible by all users, including anonymous, or should be visible to only users of given groups or only to administrators and DSpace-CRIS 7 Item's owner.
- Scripts to migrate DSpace-CRIS items from version 5 and 6 installations to new DSpace-CRIS 7 installations are provided. This feature is still in preview.
- Added support for Orcid Funded-By during orcid synchronization (see <https://info.orcid.org/funded-by-relationship-type/>)(<https://info.orcid.org/funded-by-relationship-type/>) and <https://twitter.com/HelenGNewnham/status/1402183540637376512?s=19>)(<https://twitter.com/HelenGNewnham/status/1402183540637376512?s=19>)

Data collection

- Added possibility of setting submission form's panels opened / closed when submission form is rendered
- Inline metadata groups are sortable

Architecture

- Aligned with DSpace 7.0 tag, several bugs have been resolved

Data presentation

- Added possibility of having icons in box headers
- Orcid identifier links to profile on ORCID registry
- Updated profile picture export
- OAI: Fixed list records in cerif format
- Statistic accessible via contextual menu
- Improved navigation out of statistics page
- Profile management
- When a researcher profile is created, data are enriched with target collection's template item (if present)

Data quality & accuracy

- Updated deduplication checks: item type and target community and collection are evaluated while detecting duplicates.

Interoperability

- Added support for Orcid Funded-By during synchronization
- Improved handling of special characters during ORCID synchronization
- More crosswalk export formats available for Patent entity
- Virtual field to print a date in different formats during crosswalk dissemination
- Virtual field to explore and print part of the controlled vocabulary hierarchy during crosswalk dissemination

Data security

- If user belongs to a special group during process scheduling, this group is taken into account while running the process.
- Nested metadata groups are displayed only if security defined for their parent metadata allows their display
- Added security rule "CUSTOM DATA & ADMINISTRATOR" to make data available to Administrators or depending on some custom user defined rules.

based on DSpace version 7.0 tag Rest [commit 3d9df39](#) and Angular [commit 9fc7b57](#)

Documentation at https://github.com/4Science/DSpace/releases/download/dspace-cris-2021.01.01/dspace-cris-2021_01_01-technical-documentation.pdf

DSpace-CRIS 7 2021.01.00 June, 2nd

This version fully supports all key use cases for a modern repository and RIMS / CRIS system. It is designed for new users, as migration from previous versions still requires some custom data extraction and transformation.

With DSpace-CRIS 7, 4Science is delighted to announce a number of key enhancements which improve the flexibility, integration, data quality and accuracy of DSpace-CRIS:

- Full ORCID v3 integration (push/pull information)
- Integration with dozen external data sources, including commercial ones, to retrieve bibliographic and bibliometric data
- Support for decentralised management, self-service researcher profile management and approval workflows
- Aligned to the latest OpenAIRE Guidelines for Literature Repositories, Data Archives and CRIS Managers
- Data quality tools ensure that your information is always complete and accurate

These enhancements with DSpace-CRIS 7 build on the new DSpace 7 architecture, featuring a new Angular UI and a fully-featured REST API.

Architecture

- Aligned with DSpace 7
- full REST API with a documented contract
- modern Angular SPA UI

Authentication

- DSpace-CRIS can be integrated with several Identity Provider ranging from Shibboleth, LDAP, OpenID Connect, ORCID to a local username /password (encrypted) database

Data collection

- Submission process for all the entities in the OpenAIRE CRIS information space (Publications, Patents, Products, People, OrgUnits, Projects, Fundings, Equipments, Journals)
- Import from external sources available for most entity types: Fundings from OpenAIRE, Patents from the European Patent Office, OrgUnits from Sherpa/RoMEO (publisher), People from ORCID, Publications from ORCID, PubMed, CrossRef, Scopus, Web of Science, OpenAIRE, arXiv, NASA/ADS, CiNii, Scielo, VuFind, PubMed Europe), Journals from Sherpa/RoMEO
- Automatic enrichment of manual submission looking up to the external providers by identifiers
- Bulk operations (creation, update, delete) via xls on all the entities with easy cross-linking (any identifier can be used to link any kind of entities, i.e. publications to a person via an ORCID, staffno, etc) and future reference (link to an entity that is not yet in the system via an identifier that will be resolved later). Bulk operations are validated against your data model, submission configuration and security (mandatory and available fields, relations, etc.)
- Publication Metadata extraction from Scholarly PDF via machine vision (based on the Grobid project)
- Receive automatic alert from compatible providers (OpenAIRE, ORCID) about missing publications or wrong/incomplete data on existing records
- Automatically import new publications for your researcher from Scopus and Web of Science
- Grab bibliometrics data for your publications and authors from Scopus and Web of Science
- Manage complex structured data as nested metadata and ternary relations

Data presentation

- define sections and entry points to explore your repository composing configurable widget such as sorted list of objects (Most viewed, Most cited, Recent additions, etc.), infographics for key indicators (number of publications, researchers, etc.), search facets, browse indexes, advanced search form and branding messages
- easily organise your data without code change in tabs and boxes
- include references to linked entities in any entity page (i.e. the list of publications of a researcher, the list of funding received by a project, etc.)
- present search results and linked entities in a graphical way with pie, line, bar charts
- export your researchers information in professional looking PDF/RDF CV
- export details about your other entities (Funding, Projects, Organisations, etc.) in PDF/RDF fact sheets
- export publications data in citation formats (APA, Chicago, MLA, etc.) via [CSL](#)
- show the bibliometrics collected for your publications and authors
- include alternative metrics information for your publication from AltMetric and/or Dimension
- ORCID and authenticated ORCID are properly displayed in researcher profiles and linked records (publications, projects, etc.)
- granular visibility at metadata level based on contextual rules (financial data of a funding visible only to the investigators involved in the project, personal contact data only to HR people, etc.)
- rich and extensible usage reports are available for all the entities including direct data (visualization and download) and aggregated data about the linked objects (visualization of researcher's publications, etc.). Data can be visualized in tabular and graphical form with maps and exportable charts (pie, line, bar). Reports can be produced for a specific time frame or since the system setup

Profile management

- Researchers can manage directly selected information in their profiles and linked records
- List of linked objects in the profile can be amended, hiding unwanted objects (old research) and forcing a preferred visualization order (selected publications, projects, etc.)
- ORCID Synchronisation: the researcher can connect/disconnect her local profile with ORCID to received suggestion about missing publication and push update to the ORCID registry
- ORCID preferences: it is possible to configure which details are synchronised (biographic information, affiliation, qualification, education, publications, funding) setting a manual or automatic (over the night) push

Data quality & accuracy

- Identify potential duplicate during the submission and approval workflow
- get flags for unrelated entities or uncertain matches (i.e. not identified authors in a publication, investigator in a project, etc.). Option to automatically create new records for specific entity types or manual curate the authorities
- configurable lookup authorities both internal than external, such as the personal staff, the ORCID registries, the recorded fundings, the OpenAIRE project database and more
- default to international approved data model (CERIF / OpenAIRE) and controlled vocabularies (COAR)
- retains identifier for external entities for future use and automatic match (i.e. ORCID of external authors)
- enforced validation in bulk operation to guarantee that the record structure always match your definition (i.e. the proper metadata are used according to the entity definition)
- Receive automatic alert from compatible providers (OpenAIRE, ORCID) about missing publications or wrong/incomplete data on existing records
- Automatically ingest publications for your researchers from Scopus and Web of Science
- Configurable workflows by collection and entity types to involve librarians, research officer, legal, ethical and financial department in data input and verification
- Correction workflow to be used by less privileged user to request correction on existing record that need to be moderated
- Easily to monitor and organise tasks queue for approvals, changes in correction requests are highlighted

Data security

- enforced granular security at the metadata level across the whole platform: REST API, export and import tool, visualization
- support for partial editing so that researcher can edit some (configurable) information in their profile and their related records without touching master data coming from external systems or under the Institution responsibility
- easily access to an audit log of all the operations performed on a record
- REST API are protected using JWT, SSL, CSRF Token

Interoperability

- Connectors to retrieve records (Publication, Person, Funding, OrgUnit, Journal) from 17 external data sources
- Connectors to retrieve bibliometrics data for your publications and authors from Scopus and Web of Science
- Full integration (push/pull) with ORCID via v3 API and support for WebHook (Premium API)
- Aligned to the latest OpenAIRE Guidelines for Literature Repositories (v4, v3), Data Archives (v4 unreleased) and CRIS Managers (v1.1.1)
- Full REST API
- export options in XML, CERIF XML, XLS for all the entities

based on DSpace 7.0-SNAPSHOT (REST [commit ebd54ff](#), Angular [commit f85a5e6](#))

Documentation at https://github.com/4Science/DSpace/releases/download/dspace-cris-2021.01.00/dspace-cris7-2021_01_00-technical-documentation.pdf

2020

We are ready to tag a new official DSpace-CRIS 5 and 6 releases after the cut of the official DSpace 6.4 and 5.11 versions, up to now we are still working on snapshot releases. The following features have been introduced:

Updates to the ORCID Integration

- switch to the ORCID v3 API
- possibility to link the local researcher profile to ORCID getting authenticated ORCID without being forced to enable the ORCID login for the whole platform
- ability to force push / remove objects from the queue
- improved logging and feedback to the user when there are sync issues
- deal with discrepancies between ORCID and DSpace-CRIS in the datamodel when links are used in place of text and viceversa
- better performance with parallel requests to get details during a lookup

Submission

- support for a fast local mode in the authority lookup so to avoid unnecessary calls to external services when looking for internal references (local profiles, projects, etc)
- more details retrieved from WOS API (Keywords PLUS, ArticleNumber)
- better handling of network resources and throttling with Pubmed and WOS
- flag potential duplicates early in the start submission lookup step (by identifiers)
- Unpaywall integration to grab and/or link to open access fulltext where available

Other

- Processor to visualize (top) objects on a map
- Configurable component to visualize hierarchical relations (orgunits, suborgunits, etc.)
- Improved multi-language support for CRIS metadata, now a fallback language is supported and labels can be set in messages.properties also for the edit screens
- Adherence to the new **GeoLite 2 distribution** policy
- Removed use of the **jxl** (outdated) library to deal with excel files
- Added CRIS objects to the **sitemaps**
- Script to **export** CRIS objects
- Script to **unsubscribe** an person from all notifications

2018/2019

DSpace-CRIS 5.10 (not official released but our **recommended version**: please use the snapshot - 5.9 skipped)

*** These features are already available on the 5_x_x maintenance branch ***

- Alignment to the latest official minor releases of DSpace
- Functional alignment between versions 5.x --> 6.x
- International Standards:
 - ResourceSync enabled out-of-box
 - [Compliance with the OpenAIRE guidelines](#) supporting the Datacite Schema 4.1 for Data Archives to better disseminate the datasets*
 - [Compliance with the OpenAIRE guidelines](#) for CRIS Manager v1.1.1
- CRIS Objects management:
 - Delegation of the Administrative UI for the edit and deletion of CRIS entities. To delegate the creation of new CRIS entities it is needed to setup a special collection and a ItemFilter mapping that will convert items to CRIS object upon submission see [How to collect data about CRIS entities](#)
 - Concept of CRIS Owner to allow delegation on edit (PI of a project, Journal Director, etc.)
 - Support for granular edit permissions on DSpace-CRIS objects
 - Improved procedure to update data model configuration
 - Light support for multilingual attributes in DSpace-CRIS entities
 - Support UI sorting of nested CRIS objects (i.e. sorting of affiliation by date, by role, etc.)
 - Script to identify and merge duplicated CRIS Objects (Researcher profiles, etc.) - merge of duplicate publications is also already available in UI since version 3
 - [Add linked objects from the CRIS detail page](#) (publications to a project, projects to a researcher profile, etc.)
- Submission-related features:
 - [Integration with Grobid](#) providing automatic extraction of metadata from PDF file (using computer vision not limited to properties in the PDF file)
 - import of multiple records at once in the StartSubmissionLookup
 - Import and feed publications from ADS (Astrophysics Data System)
 - Project Lookup and import from OpenAIRE via REST API*
 - Journal Lookup and import from ZDB database (journal database maintained by Staatsbibliothek zu Berlin, Preußischer Kulturbesitz and Deutsche Nationalbibliothek)
 - [Ability to import data from linked entities](#) in the item during the submission to provide suitable default (i.e. nested affiliation of authors as appear in the publication prefilled with the current affiliation)
 - fix: Scopus, Pubmed & Crossref can be used as a search provider (title, authors, year) other than lookup by identifier
- Researcher profile management features:
 - Improved publication claiming: researchers are able to claim their role in existing publications (manually or via list of potential matches and bulk claiming)
 - Several improvements & fix to the full (push/pull) ORCID integration, including:
 - switch to v2.1 (from 2.0)
 - Automatic import of new publications from ORCID (webhooks)
 - a new script to pull biographic update from the ORCID registry
- End user features
 - Login in page
 - Support for the Dimensions badge
 - Improved Altmetric badge (supporting also the ISBN identifier)
 - Statistics improvements (including the unknown category in region, country, city)
- New statistics about the workflow process

* these developments have been funded by OpenAIRE, as result of a [public CFP](#) in February 2018, see [the announcement here](#)

We thank [Technische Universität Hamburg](#) , [University of Bamberg](#), [University College of Dublin](#), [University of Coimbra](#) and Avicenna-Research for their support.

DSpace-CRIS 6.3 (not official released, please use the snapshot)

- Alignment to the latest official minor releases of DSpace (still in progress)
- Functional alignment between versions 5.x --> 6.x (still in progress)

2017

5.8 (released on September 15th, 2017) - see the full announcement here: <https://www.4science.it/en/2017/09/14/dspace-cris-5-8-and-orcid-v2-api-support-release-announcement/>

- Switch to the ORCID API v2, see <https://members.orcid.org/api/news/xsd-20-update>
- bug fixes from DSpace 5.8

5.7 (released on August 8th, 2017) - see the full announcement here: <https://www.4science.it/2017/08/09/dspace-cris-5-7-release-announcement/>

- **Hierarchy metadata support for DSpace items (new addition from the RC):** It is now possible to configure one or more metadata as child of another one. If the parent metadata is repeatable, adding an additional value for the parent metadata will allow to input values also for the linked

child metadata. Currently only text-based (onebox) metadata can be used as child metadata but support for the other input types will be added in subsequent minor releases.

- **Signposting support:** DSpace-CRIS is more machine friendly than ever. It supports now the following [signposting patterns](#): Author, Identifier, Publication Boundary
- **The CORE Recommender Engine integration:** Display documents that are semantically similar. Powered by CORE <https://core.ac.uk/>. You can take a look at our example here: <https://dspace-cris.4science.it/handle/123456789/102>
- **Authority Lookup based on Getty Vocabularies:** For more information about Getty Vocabularies please check <https://www.getty.edu/research/tools/vocabularies/index.html>; DSpace-CRIS implementation involves both the "Getty Thesaurus of Geographic Names Online" (<https://www.getty.edu/research/tools/vocabularies/tgn/index.html>) and "The Union List of Artist Names" (ULAN - <https://www.getty.edu/research/tools/vocabularies/ulan/index.html>)
- **Authority Lookup based on Vial service:** The VIAF® (Virtual International Authority File) combines multiple name authority files into a single OCLC-hosted name authority service. More info at <https://viaf.org/>
- **Import ORCID publications via Submission Data Loader:** During the submission process, users can choose an ORCID and check which publications to import
- **Cookies Policy Popup:** This feature allows easy compliance with the EU legislation on cookies
- **Other minor improvements:** It is now possible to clean Solr statistics entries via WebUI; to upgrade Hibernate and Spring to the minor versions; we have improved the automatic calculation of derived metrics and the creation of CRIS objects as part of the submission process
- **Other minor fixes:** the out-of-box DSpace OAI Harvesting in DSpace-CRIS; the DSpace-CRIS SOAP web-services; the DSpace-CRIS Network when users try to show many graphs

6 RC / 5.7 RC (released on June 27th, 2017) - see the full announcement here: <http://duraspace.org/articles/3236>

- **The CORE Recommender Engine integration:** Display documents that are semantically similar. Powered by CORE <https://core.ac.uk/>. You can take a look at our example here: <https://dspace-cris.4science.it/handle/123456789/102>
- **Authority Lookup based on Getty Vocabularies:** For more information about Getty Vocabularies please check <https://www.getty.edu/research/tools/vocabularies/index.html>; DSpace-CRIS implementation involves both the "Getty Thesaurus of Geographic Names Online" (<https://www.getty.edu/research/tools/vocabularies/tgn/index.html>) and "The Union List of Artist Names" (ULAN - <https://www.getty.edu/research/tools/vocabularies/ulan/index.html>)
- **Authority Lookup based on Vial service:** The VIAF® (Virtual International Authority File) combines multiple name authority files into a single OCLC-hosted name authority service. More info at <https://viaf.org/>
- **Signposting:** dspace-cris now provides out-of-box support for the Author, Identifier, Publication Boundary patterns, <http://signposting.org/>
- **Import ORCID publications via Submission Data Loader:** During the submission process, users can choose an ORCID and check which publication to import
- **Cookies Policy Popup:** this feature allows easy compliance with the EU legislation on cookies
- **Other minor improvements:** it's now possible to clean Solr statistics entries via WebUI; to upgrade Hibernate and Spring to the minor version; we have improved the automatic calculation of derived metrics and the creation of CRIS objects as part of the submission process
- **Other minor fixes:** the out-of-box DSpace OAI Harvesting in DSpace-CRIS; the DSpace-CRIS SOAP web-services; the DSpace-CRIS Network when users try to show many graph

2016

5.6 (released on November 16th, 2016 - [click here to browse the code on github](#)) / include the release of **DSpace-CKAN integration module**

The release includes the security fixes already available in DSpace JSUI 5.6, making it easier to upgrade from a recent DSpace version to DSpace-CRIS (no more need to run sql scripts manually) and brings a lot of new and exciting features:

- **UI Extensibility:** the webapp can now use the servlet 3.0 specification, enabling the creation and plug-in of external modules with their specific web UI components and pages. An extension point has been introduced to plugin viewers dedicated to particular bitstreams.
- **Edit metadata for any DSpace Object via the UI:** it is now possible to edit/add/remove metadata for Communities, Collections, Bundles and Bitstreams, to simplify the management of further functionalities based on custom metadata.
- **Edit archived Items with UI submission:** administrators can now edit archived or withdrawn items using the same UI available for submissions, exploiting functionalities such as dropdown, autocomplete, ORCID lookup, validation, etc.
- **Deduplication tools (detect & merge):** this administrative tool allows to check the database for potential duplicates and to merge the confirmed matches. During the submission, an alert is shown when a potential duplicate is detected. More information and screenshots available here <https://wiki.duraspace.org/display/DSPACECRIS/deduplication+alert>
- **Improved ORCID synchronization:** DSpace-CRIS now stores the internal identifier assigned by ORCID to the publications in order to prevent record duplications when a local DSpace-CRIS update is pushed to ORCID ("put" code). In addition to that, DSpace-CRIS is now able to push to the ORCID profiles educational and professional information of the researcher.
- **Improved submission forms:** among the new functionalities we can list the regex validation support, a framework for complex validation support, new input type "number" for submission and new input type "year" for submission.
- **Improved security model for CRIS entities:** every single CRIS object, object tab and object box can now be configured to be visible to specific users or user groups. An example of this would be when parts of a specific project description (such as costs) can be linked to the project participants, or the department director, or the research/contract office, etc.
- **Automatic calculation of derived metrics:** examples are average, maximum, minimum, variance of publication citation counts shown as metrics at the level of researcher, organization, project, and so on.

- Advanced import framework: border tables have been introduced to easily create ETL procedures to load and synchronize data, currently limited to publication, in the DSpace-CRIS installation.
- On-demand DOI registration: an administrative UI allows to register DOIs via DataCite or CrossRef for items matching configured criteria (theses, dataset, etc.). For each group it is possible to define the template used to generate the DOI and the metadata to deposit. The precalculated DOI can be revised by the administrator to allow complete personalization.
- **Template service:** the template item now supports the use of substitution variables bound to dynamic code plugged in as spring bean. The functionality allows the generation of default values dynamically generated in submission such as the timestamp, the details of the submitter, and so on.
- Creation of CRIS objects as part of the submission process: it allows users to create new CRIS objects (persons, projects, organizations, events, etc.) on demand as needed during the submission of a DSpace item. It can be even used to provide a workflow around the collection of data, including metrics, about CRIS entities.

As first implementation of the UI Extensibility we provide native support in DSpace-CRIS of the DSpace-CKAN Integration module (<https://github.com/4Science/dspace-ckan>). DSpace-CKAN allows an in-depth integration between DSpace and CKAN. Tabular data (CSV, XLS, etc.) are deposited in a CKAN instance through a curation task. The preview of the dataset content is enabled proxying in DSpace the CKAN Datastore API so to enforce the access condition defined in DSpace (Open Access, embargo, etc.). The dataset preview allows filtering, pagination and sorting, all the operation are performed on server side to save bandwidth overload. An example is visible here: <https://dspace-cris.4science.it/handle/123456789/31>

5.5 (released on March 27th, 2016 - [click here to browse the code on github](#))

- Global Statistics: to provide a global view over the repository usage, visualization, download and deposit trends
<http://demo-dspace-cris.cineca.it/cris/stats/site.html?handle=123456789/0&type=item>
- Facets for dynamic components: publications list, projects list and any other dynamic component included in the researcher profiles or in other CRIS entity details page (project, organization, etc.) can now provide faceting capabilities
<http://demo-dspace-cris.cineca.it/cris/rp/rp00006>
- Bibliographic export for publications: researcher's publication list can be exported in several format by the profile owner and search results can be exported by the repository administrators
- Incremental Authority from previous value: to suggest terms from values already added into the system to keep metadata clean and to avoid misspelling. Common use cases include keywords, publishers, etc.
- Direct access to the researcher profile using external identifiers: make it easy to link external systems to your DSpace-CRIS installation without the need to know the internal identifier. For instance you can address your researcher profiles using their ORCID
<http://demo-dspace-cris.cineca.it/cris/rp/details.htm?it=orcid&lv=0000-0002-9421-192X>

5.4 (released on February 15th, 2016 - [click here to browse the code on github](#))

- There is now a general infrastructure to support metrics about any DSpace/DSpace-CRIS objects, such as traditional bibliometrics for publications, authors, journals, alternative and local metrics.
- DSpace-CRIS is now integrated out-of-box with Scopus, Web Of Science, and PubMed Central to collect, show and process citation data. The AltMetrics badge can be shown beside the other metrics.
- For any defined metric DSpace-CRIS allows for calculating objects' local ranking and percentile in order to provide the "most cited" component to different web pages (the home page or any other specific Department/Office pages).
- Internal statistics have been elaborated as usage metrics to make them available for "Most viewed", "Most downloaded" components and to calculate local percentile.
- Metrics data can now be exposed in "listing" to make browsing and searching easier, and they can also be used as sorting criteria. This is done by extending the SOLR capability to load additional information from an external source. This feature enables future improvements such as support for "user rated content" to DSpace.
- Another important new development is the ability to load and update CRIS' objects into the system using XLS file, a similar approach to what is actually supported by DSpace for standard items. The feature allows a user to set any kind of field, including the relations between different objects (such as org.unit and researchers, projects and researchers, etc.), and custom fields.
- The data model configuration has been simplified, indeed it is now possible to easily export and import the configuration also using XLS files.
- There is now a better integration between DSpace-CRIS and ORCID. When a researcher creates her profile in the local DSpace-CRIS, the system automatically collects all the biographic information (such as biography, additional names, external URLs, additional identifiers) from ORCID, both when the researcher directly accesses the system, as well as when a new publication is added to the system that the researcher is co-authoring.
- Additionally, the new version has improved the layout and navigation experience: the navigation menu invites the user to explore the repository contents by "Entity", offering the appropriate tools for each specific type of content such as dedicated browse indexes, advanced search options and components to highlight recent or featured content.

2015

5.3 (released on August 15th, 2015 - [click here to browse the code on github](#))

- Classification widget for CRIS entities (support for hierarchy taxonomy)

5.2.1 (released on July 24th, 2015 - [click here to browse the code on github](#))

- ORCID integration: ability to push biographic data, publications and projects to the ORCID profile
- Boolean widget for CRIS entities
- Text Widget for CRIS entities now support input from controlled list using dropdown, checkbox or radio buttons

5.2 (released on May 25th, 2015 - [click here to browse the code on github](#))

- ORCID integration (authentication)
- Ability to claim profiles (submission lookup on ORCID)
- Global search with Text Highlighting

4.3 (released on Apr 15th, 2015 - [click here to browse the code on github](#))

- many layout improvement
- Global Search funded by University of Hong Kong
- ORCID integration (authentication, submission lookup and import into cris)

4.2 (released on Mar 11th, 2015 - [click here to browse the code on github](#))

- bug fixing of the 4.1.2 release and update to DSpace 4.2 release

2014

4.1.2 (released on Jul 12th, 2014 - [click here to browse the code on github](#))

- bug fixing of the 4.1.1 release

4.1.1 (released on Jun 28th, 2014 - [click here to browse the code on github](#))

- bug fixing of the 4.1.0 release

4.1.0 (released on Jun 13rd, 2014 - [click here to browse the code on github](#))

- upgrade to DSpace 4.1 and to the bootstrap layout also for the DSpace-CRIS pages
- full support for Oracle (tested on 11.g R2 and 12.c), other than PostgreSQL 9.x
- Extensive testing on Oracle
- Easier installation process

2013

1.8.3-beta (released on Sep 6th, 2013 - [click here to browse the code on github](#))

- bug fixing of the 1.8.2.1-beta release
- upgrade to dspace 1.8.3 (security fix)

3.2.0-beta (first draft on Jul 31, 2013 - released on Aug 3rd, 2013 - [click here to browse the code on github](#))

- porting to DSpace 3.2

1.8.2.1-beta (released on July 24th, 2013 - [click here to browse the code on github](#))

- bug fixing of the 1.8.2.0-beta release
- Data Model: ability to define new object types via UI to manage 2nd level CRIS entities: prize, equipment, laboratory shared and linked to one or more 1st or 2nd level CRIS entities

1.8.2.0-beta (released on June 24th, 2013 - [click here to browse the code on github](#))

- Usage Statistics
 1. CRIS entity detail page visit
 2. Global & Top related CERIF Entity views & downloads referencing the CRIS entity (projects for researchers, researchers for OrgUnits, etc.)
 3. Global & Top item views & downloads referencing the CRIS entity
 4. email and RSS alerts
- PubMed Article level metrics
 1. cited-by count in the item page
 2. number of pubmed articles for researcher
 3. total citations in pubmed for researcher (only items in local DSpace database will be counted)
- Integration with DSpace
 1. ability to hide publications (or any other related entity: projects, etc.) in the researcher profile
 2. make a list of selected publications (or any other related entity: projects, etc.)
 3. claim/disclaim (link/unlink) previously DSpace entered publication items, to a researcher profile
- SOAP WebServices for READ-ONLY access to CRIS information

- Network visualization and analysis

1.8.2.0-alpha1 (unreleased, [available on github](#) since February 4th, 2013)

- bug fixing of the alpha release

2012

1.8.2.0-alpha (released on November 26th, 2012)

- Management of the 1st level CRIS entities: Researcher Profiles, Projects, Organization Units
 1. Administrative UI for data model definition using the [JDynA framework](#)
 2. Detail page for any entity organized in Tab and Box themed with JQuery UI
 3. Faceted Search using the DSpace Discovery 3.0 configuration
 4. Customizable Browse indexes using a backport of the SOLR Browse DSpace 3.0 contribution
- Basic integration of DSpace-CRIS entities with publications (DSpace Item):
 1. CRIS entities as authority for Item metadata
 2. list of referencing DSpace Items in the detail page of the CRIS entities