



Cartography

155CART

CTU – FCE T. Janata, PhD

Project of a cartographic work

Evaluation of maps

Copyright law

Cartographic professions

- **Editor-in-Chief**
- **Editor**
- **Cartographer – compiler**
- **Operator**
- **IT technologist – data specialist, sw specialist**
- **Graphic**
- **Auditor**
- **Polygraph**

(formerly also cartographic draughtsman, carto-lithographer)

Project of cartographic work

Preparatory work

Collection and evaluation of documents

- map documents of the same or larger scale than the map being prepared
- **often in digital form or as a spatial data base**
- evaluation of the documents = especially a thorough **study of the data structures and the relevant metadata**

Study of the treated area

- existing maps, orthophotos, satellite images, ...
(also within the internet environment)
- basic spatial characteristics of elements
- classification schemes with characteristics of the areas, geographical descriptions of the areas

Project of cartographic work

it is processed especially for the creation of larger cart. works
(of atlas type, etc.)

- specification of the purpose
 - title and possible thematic focus of the map
 - determination of scale
 - choice of cartographic projection
 - map composition and sheet layout
 - draft of the map content
 - map key design
 - selection of base data
 - design of technology
 - organisational and economic support for the map production
- + setting a timetable, preparing methodological instructions for authors, etc.

Editorial and compilation work

Traditional (handmade) map making

■ **compilation manuscript (CM)**

- author's concept, author's compilation original
- design sheet
- rendering of CM, adding description
- preparation of map lettering schedule

■ **publisher's originals (PO)**

(draught of selected elements which are to be combined for printing in single colour) – identical in content to CO, processed separately for each print colour

- PO of linear elements
- PO of geonyms
- PO of shaded terrain

■ **revisions** – CM, PO, colour coating

Publication of cartographic works

- publishing = processing, printing and publication of products
- maps, atlases and other cartographic products are among so-called **non-periodical publications**
- state institutions (SMS – state map series), cartographic companies, publishing houses and publishers
- **Act No. 37/1995 Coll. on non-periodical publications**
 - does not apply to relief and wall maps, globes, and basic and thematic SMS in analogue and digital form
 - specifies the information that non-periodical publications intended for public distribution must contain - see scripts
 - determines mandatory copies (for major libraries)

Types of edition of cartogr. works

- first edition of the cartographic work
- repeated editions (reissue)
 - unrevised (repeated) edition
 - supplemented edition
 - repaired edition (changes up to 10% of the work volume)
 - revised edition
- **Editorial plan** ... in larger companies
 - operational (semi-annual, annual)
 - medium-term (3 to 5 years)

Evaluation of cartographic works

- with regard to the manner of creation of the work
- with regard to the purpose of the evaluation

The evaluation is carried out:

- in the process of creating derived maps – map documents
- when solving practical problems on maps – geometric accuracy, details, ...
- when using maps for the purposes of various scientific disciplines – completeness of content, illustration, timeliness

General: to determine the **characteristics, quality and suitability** of a map for a particular purpose



Three facets of map evaluation

- **professional** – map content
- **technical** – cartographic interpretation of the map content (printing, font, quality of processing)
- **aesthetic** – map composition, use of colours

Hierarchy of indicators

- firstly, a hierarchy of quality indicators must be established to evaluate the map
- **priorities may vary depending on the purpose and use of the map:**
 - geometric accuracy (measurements on maps)
 - detail (graphical passport)
 - degree of illustration (orientation in the field)
- requirements may sometimes be contradictory
 - geometric accuracy × degree of generalisation
 - detailness × illustration

Evaluation of maps and map files

Evaluation scheme (different approaches):

- **general details**
- **map composition**
- **mathematical elements**
- **completeness and content**
- **factual accuracy and timeliness of content**
- **map legibility**
- **fidelity of representation of reality and geometric accuracy**
- **quality of technical design of cartographic interpretation**
- **map aesthetics**
- **scientific value**

General information / Composition

■ General details

- name
- theme
- scale
- format
- information given in the imprint (author, publisher, place and year of publication, order of publication, distributor, etc.)
- price

■ Map composition

- map compilation
- graphic design
- placement of basic and superstructure compositional elements

Mathematical elements

- evaluation of the construction basis
- identification of scale and cartographic projection
- scale, suitability of the choice of cartographic representation (especially for small scale maps), distortion, coordinate grids are evaluated
- for map sets, the composition of the sheet layout and the method of nomenclature are also evaluated

Completeness and content

- the volume of information and its structure is assessed
- for each element, the means of expression used, correctness of scales, classification into groups and categories
- (physical) units used
- the contents – according to the purpose of the map

Correctness and timeliness of content

- by comparison with other cartographic works
- evaluation of the degree of cartographic generalisation
- the evaluator is often a specialist
- emphasis on displaying all content as of a specific date

Readability

- symbolism of individual elements – colour, shape, dimensions
- location of labels and their legibility
- hierarchy of elements, dominance of the most important features
- legibility – very important

Fidelity of reality representation and geometric accuracy

- comparison of the selected map content with a reliable larger scale map or a set of geodetic measurements
- use of known point coordinates and coordinate networks
- digitization of a sufficient number of points on both maps, their transformation into a common coordinate system, determination of mean positional errors for individual elements
- effect of cartographic distortions, effect of paper shrinkage
- knowledge of errors in the map creation process (errors in the underlying maps) is advantageous

Quality of technical rendition of cartographic interpretation

- assessment of individual means of expression both individually and within the map key
- mutual distinguishability of characters
- their clarity
- links between individual characters
- overall colour solution
- printing – suitability of the paper used, typesetting, colour register (mutual offsets of individual colour channels)

Map aesthetics

- difficult to define
- today's maps – technical rather than artistic works
- aesthetics is greatly influenced by the composition of the map and the use of superstructure elements, the quality of the description and the colour scheme of the map
- map infographics as a new and specific genre

Scientific value

- the map representation must be in accordance with the current state of scientific knowledge of reality, especially in the technical, natural and social sciences
- especially important for maps for scientific purposes
- assessment requires expertise in the relevant field

Evaluation of cartographic works

- evaluation always includes **objective and subjective** aspects
- subjective – mainly aesthetics, partly composition and language of the map (map key)
- the evaluation should be enriched by the subjective opinion of the evaluator, but this opinion should be strictly separated from the objective requirements of the cartographic work

- evaluation of map works – often in specialized journals
- reviews of thematic maps – in periodicals according to the thematic focus
- specialized literature focusing on errors in maps, map design

Competition "Map of the Year"

- organized by the Czech Cartographic Society
www.czechmaps.cz
- evaluation by an expert committee

- categories:
 - Atlases, map files and editions
 - Separate cartographic works
 - Cartographic works for schools
 - [Cartographic results of student works](#)
 - Digital products
 - Cartographic applications on the Internet

Copyright Law

- Copyright is governed by **Act No. 121/2000 Coll. – Copyright Act** as amended by Act No. 81/2005 on copyright and rights related to copyright
- Copyright applies to **all cartographic works** (maps, atlases, ...) **except**
 - **cadastral maps** (they should depict the reality as accurately as possible, they do not depend on the author, there is no room for author's invention)
 - **and maps derived from them** (State map 1 : 5 000, ...)
- copyright protection is usually marked
© author, date inscription

Copyright

The Copyright Act regulates

- the author's rights to their work
- rights related to copyright (rights of artists, record producers, releasers, publishers,...)
- the acquirer's right to its database
- protection of rights
- collective management of copyright

Subject matter of copyright

- The subject matter of copyright is a literary work and other artistic and scientific work that is the unique result of the creative activity of the author and is expressed in any objectively perceptible form, including electronic form, permanently or temporarily, regardless of its scope, purpose or meaning.
- A work of art is mainly a verbal, musical, dramatic, photographic, audiovisual, painting, graphic, sculptural, architectural, ..., **cartographic work**.

Author's work

A work of authorship is also considered to be

- **a computer programme** if it is original in that it is the author's own intellectual creation,
- **databases** (data selection, data organization)
- **translations** into another language
- anthologies, journals, encyclopaedias, tapes, ...

Copyright protection applies to both complete works and parts of them.

Author's work

A work of authorship is not considered to be

- theme of the work, ideas, procedures, methods
- daily news
- discoveries, scientific theories, mathematical formulas
- statistical charts and similar items on their own
- official work
- creations of traditional folk culture
- political speeches and speeches at official meetings

Copyright

The right of the author

- to decide on the publication of their work
- to the integrity of their work, including supervision
- to use their work and to grant another person the right to use the work, i.e. to reproduce, rent, lend, exhibit, communicate to the public (perform, broadcast by radio, television, film, perform from a recording, etc.)
- the right to remuneration

Duration of copyright

- **the duration of the copyright is unlimited in time**
- the duration of the **copyright** is
 - **during the author's lifetime and 70 years after his death**
 - **for multi-authored works 70 years after the death of the last author**
 - **for anonymous works, it lasts for 70 years from their publication**
 - **in the case of employee (or collective) works, the employer exercises the property rights in the work (on the death or dissolution of the employer, the author acquires the right to exercise these rights)**

Free use of copyrighted works

- after the expiry of the property rights
- use of the work for personal use (including making a recording, reproduction or imitation of the work of art) – does not apply to computer programs and electronic databases
- for citation to the extent justified, for use in a lecture for scholarly or other educational purposes

Copyright protection

- the author may claim authorship
- seek a prohibition on the use of the work in case of unauthorized manipulation, unauthorized reproduction of the work, imitation of the work
- the author has the right to claim compensation for damages
- **copyright infringement is a criminal offence**
- Article 152 of the Criminal Code No. 140/1961 Coll. (imprisonment for up to 2 years, up to 5 years in the case of large-scale offences, a fine, forfeiture of property) or according to Article 32 of the Offences Act No. 200/1990, as amended by other regulations, by imposing a fine of up to CZK 15,000, or up to CZK 5,000 in the case of minor offences

Copyright in cartography

Creative activity in the processing of cartographic works

- deriving new maps
- transformation into cartographic views
- change the map language
- change of content, generalisation, updating
- combining the contents of different maps
- change of scale or extent of the territory
- other ways of creative reworking

Copyright in cartography

Authoring documents for maps and atlases

- compiler's original or author's original
- map project (editorial guidelines)

Author's definition (ICA)

- The author of the map is the individual person, group of persons or institution that originated the idea, developed the project, adopted the method of cartographic representation of the map, and is responsible for the content of the map.

Publishing contracts

- the author may grant the publishing house the right to publish the work under pre-agreed conditions specified in the publishing contract
- for the calculation of royalties, the unit used is the author's sheet (AS)
 - for maps: 1 AS = 2300 cm² of map area
 - for text: 1 AS = 20 N (standard) A4 manuscript pages
 - 1 N A4 manuscript page = 1800 characters including spaces between words
- card work processed directly in the card publishing house = **employee copyright work** (editors, compilers, cartographers/operators...)
- the publishing house is the copyright holder - it can license to (or acquire from) other entities and enter into licensing agreements