

Mapping of Digitalization and Blockchain Projects in the Land Sector

Annex to the paper “Disruption or Déjà Vu? Digitalization, Land and Human Rights. Case Studies from Brazil, Indonesia, Georgia, India and Rwanda” (published November 2020).



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TABLE 1: GLOBAL MAPPING OF BLOCKCHAIN PROJECTS IN THE LAND SECTOR

No.	Country	Location	Donor/company involved	Time-frame	Status	Links
1.	Australia	Regional (New South Wales)	ChromaWay	2018-2019	Proof-of-concept (PoC) completed/ Pilot planned	https://theblockchainland.com/2018/10/18/new-south-wales-blockchain-property-conveyance/ https://www.registrargeneral.nsw.gov.au/___data/assets/pdf_file/0009/354393/ChromaWay.pdf
2.	Bolivia	National	Inter-American Development Bank / ChromaWay	2019 -	PoC ongoing	https://www.iadb.org/en/project/RG-T3356 https://bit.ly/3sSZeri https://www.youtube.com/watch?v=wymNVICRc-o
3.	Brazil	Regional (Pelotas and Morro Redondo cities)	Ubitquity	2017	Pilot completed	https://www.oicrf.org/-/evaluating-the-use-of-blockchain-in-land-transactions-an-archival-science-perspective https://gbaglobal.org/wp-content/uploads/2018/02/Ubitquity-Brasil-Intro-Slides-English.pdf
4.	Canada	Regional (British Columbia)	ChromaWay	2018	Prototype completed	https://www.conftool.com/landandpoverty2019/index.php/06-03-Miller-365_paper.pdf?page=downloadPaper&filename=06-03-Miller-365_paper.pdf&form_id=365&form_version=final
5.	Colombia	Regional	UST Global	2018	Prototype completed	https://coinrivet.com/colombia-launches-a-time-saving-blockchain-land-registry-pilot-project/ https://www.agenciadetierras.gov.co/2018/09/24/por-primera-vez-el-gobierno-implementa-alta-tecnologia-para-la-proteccion-de-datos-en-materia-de-tierras/
6.	Fiji	Regional (Greater Suva)	Asian Development Bank / KPMG Digital Village	2017 -	Pilot ongoing	https://events.development.asia/system/files/materials/2019/04/201904-developing-blockchain-based-land-registry-system-fiji.pdf https://www.tltb.com.fj/getattachment/Media/Newsletter/Our-DigitaLand-2019.pdf.aspx?lang=en-US

No.	Country	Location	Donor/company involved	Time-frame	Status	Links
7.	Ghana	Unknown	IBM	2018 -	Announcement/ MoU	https://www.oicrf.org/-/bockchain-and-property-in-2018-at-the-end-of-the-beginning
8.	Ghana	Unknown	BenBen	2016 -	Unknown	http://www.benben.com.gh/ https://www.cta.int/en/blog/all/article/benben-ghana-empowering-citizens-by-providing-land-security-sid0ff22d6c6-ddf1-400c-a6cb-395c42d4e468
9.	Ghana	Regional (Kumasi)	Bitland	2016 -	Unknown	https://www.forbes.com/sites/rogeraitken/2016/04/05/bitlands-african-blockchain-initiative-putting-land-on-the-ledger/#189ef44f7537 https://www.researchgate.net/profile/Christiaan_Lemmen/publication/316595854_Blockchain-based_Land_Administration_Feasible_Illusory_or_Panacae/links/590607d14585152d2e966dfc/Blockchain-based-Land-Administration-Feasible-Illusory-or-Panacae.pdf
10.	Georgia	National	Bitfury	2016 -	Completed/ Ongoing	https://www.researchgate.net/publication/332901048_Blockchain_for_digital_government_An_assessment_of_pioneering_implementations_in_public_services https://www.oicrf.org/-/bockchain-and-property-in-2018-at-the-end-of-the-beginning https://www.youtube.com/watch?v=upvK4qnlULg
11.	Honduras	Regional (La Ceiba city)	Factom, Epigraph	2015 -	Cancelled	https://www.oicrf.org/-/bockchain-and-property-in-2018-at-the-end-of-the-beginning https://www.oicrf.org/-/evaluating-the-use-of-blockchain-in-land-transactions-an-archival-science-perspective
12.	India	Regional (Haryana)	UNDP / Blocksale Solutions	2018	PoC completed	https://www.undp.org/content/undp/en/home/blog/2018/Using-blockchain-to-make-land-registry-more-reliable-in-India.html https://app.hubspot.com/documents/5052729/view/47606210?accessId=8373f0
13.	India	Regional (Andhra Pradesh)	Zebi Data, Chromaway, ConsenSys	2017-2018	Pilot completed	https://qz.com/india/1325423/indias-andhra-state-is-using-blockchain-to-build-capital-amaravati/ https://www.reuters.com/article/us-india-landrights-tech/indian-states-look-to-digitize-land-deals-with-blockchain-idUSKBN1AQ1T3

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14.	India	(Regional) Telangana		2017-2018	PoC completed	https://it.telangana.gov.in/wp-content/uploads/2019/05/Telangana-Blockchain-Policy-Draft-May-2019.pdf https://archive.factorially.com/india-government-blockchain-projects/ https://www.livemint.com/Politics/4IOMVhyOuK6k0LwSVGikZL/Telangana-govt-to-use-blockchain-tech-for-securing-land-reco.html
15.	India	Regional (Uttar Pradesh)		2018 -	Unknown	https://www.businesstoday.in/current/policy/up-may-become-the-first-state-to-fully-adopt-blockchain-technology-for-data-security/story/280576.html https://archive.factorially.com/india-government-blockchain-projects/
16.	India	Regional (Maharashtra)	XinFin	2018-2019	PoC completed	https://medium.com/xinfin/xinfin-presents-blockchain-proof-of-concept-for-land-registry-to-maharashtra-government-bb1100382f24 https://archive.factorially.com/india-government-blockchain-projects/
17.	India	Regional (Madhya Pradesh)		2019 -	Unknown	http://landrecords.mp.gov.in/tender/tender_mpclr_201718_8.pdf https://nasscom.in/knowledge-center/publications/nasscom-avasant-india-blockchain-report-2019
18.	India	Regional (Goa)		2018 -	Unknown	https://archive.factorially.com/india-government-blockchain-projects/ https://nasscom.in/knowledge-center/publications/nasscom-avasant-india-blockchain-report-2019
19.	India	Regional (Rajasthan)		2018 -	Unknown	http://ficci.in/spdocument/23117/Digital-Rajasthan-Embracing-Change.pdf https://medium.com/auxesis/rajasthan-to-roll-out-blockchain-technology-for-land-records-80d181da4daa
20.	Japan	Regional	Propy	2019 -	Pilot ongoing	https://propy.com/blog/propy-completes-first-two-blockchain-property-deals-in-japan/ https://propy.com/blog/propy-partners-with-japanese-escrow-company/
21.	Kenya	unknown	Land Layby Group, others	2018 -	Unknown	https://www.reuters.com/article/us-africa-landrights-blockchain/african-startups-bet-on-blockchain-to-tackle-land-fraud-idUSKCN1G00YK https://www.coinwire.com/land-layby-listing

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22.	Netherlands	National		2017 -	Unknown (Feasibility Study)	https://www.conftool.com/landandpoverty2020/index.php/06-03-Vos-694_paper.pdf?page=downloadPaper&filename=06-03-Vos-694_paper.pdf&form_id=694&form_version=final https://www.elra.eu/wp-content/uploads/2017/05/Jacques-VosBlockchain.pdf
23.	Peru	National	Inter-American Development Bank / ChromaWay	2019 -	PoC ongoing	https://www.iadb.org/en/project/RG-T3356 https://bit.ly/3sSZeri https://www.youtube.com/watch?v=wymNVICRc-o
24.	Paraguay	National	Inter-American Development Bank / ChromaWay	2019 -	PoC ongoing	https://www.iadb.org/en/project/RG-T3356 https://bit.ly/3sSZeri https://www.youtube.com/watch?v=wymNVICRc-o
25.	Rwanda	Regional (Kigali)	Medici Land Governance	2018 -	PoC/Pilot Ongoing	https://www.mediciland.com/projects/ https://www.globenewswire.com/news-release/2018/11/01/1641252/0/en/Medici-Land-Governance-an-Overstock-Subsidiary-Signs-MOU-With-Government-of-Rwanda-to-Implement-Paperless-Blockchain-Land-Governance-and-Property-Rights-Management.html
26.	Sweden	National	ChromaWay	2016 -	PoC completed/ Ongoing	https://static1.squarespace.com/static/5e26f18cd5824c7138a9118b/t/5e3c35451c2cbb6170caa19e/1581004119677/Blockchain_Landregistry_Report_2017.pdf https://www.researchgate.net/publication/332901048_Blockchain_for_digital_government_An_assessment_of_pioneering_implementations_in_public_services
27.	United Arab Emirates	Regional (Dubai)	ConsenSys, Dubai Properties, ERES	2016 -	PoC completed/ Ongoing	https://www.conftool.com/landandpoverty2019/index.php/06-03-alsuwaidi-635_ppt.pptx?page=downloadPaper&filename=06-03-alsuwaidi-635_ppt.pptx&form_id=635&form_index=2&form_version=final
28.	United Arab Emirates	Regional (Abu Dhabi)	Tech Mahindra	2019 -	Announcement/ MoU	https://www.techmahindra.com/en-in/dpm-abu-dhabi-and-techmahindra-launch-blockchain-solution-for-land-registry/ https://www.youtube.com/watch?v=-aSLWu20U

No.	Country	Location	Donor/company involved	Time-frame	Status	Links
29.	United Kingdom	Unknown	Methods, R3, Consensys	2018 -	PoC completed/ Ongoing	https://www.gov.uk/government/news/hm-land-registry-to-explore-the-benefits-of-blockchain https://www.gov.uk/government/publications/hm-land-registry-annual-report-and-accounts-2019-to-2020/performance-report
30.	United Kingdom	Regional (Bermuda overseas territory)	Bitfury	2018 -	Announcement/ MoU	https://www.gov.bm/articles/government-bermuda-partners-bitfury-bring-blockchain-land-registry
31.	Ukraine	Regional (Kiev)	Propy	2017	Pilot completed	https://markets.businessinsider.com/news/stocks/propy-announces-world-s-first-real-estate-purchase-on-ethereum-blockchain-1002925408
32.	Ukraine	unknown	Bitfury	2017	Announcement/ MoU	https://ti-ukraine.org/en/news/derzhavnyi-zemelnyi-kadastr-pereishov-na-tekhnohiiu-blokchein/ https://www.bloomberg.com/news/articles/2017-10-03/ukraine-turns-to-blockchain-to-boost-land-ownership-transparency
33.	USA	Regional (two counties in Wyoming)	Medici Land Governance	2018	Pilot ongoing	https://mediciland.com/projects/wyoming/ https://investors.overstock.com/news-releases/news-release-details/medici-land-governance-makes-teton-county-wyoming-first-county
34.	USA	Regional (Vermont)	Propy	2018-2019	Pilot completed	https://sos.vermont.gov/media/r3jh24ig/vsara_blockchains_for_public_recordkeeping_white_paper_v1.pdf https://propy.com/blog/vermont-blockchain-legislation-and-propy-things-you-need-to-know/
35.	USA	Regional (Cook county, Illinois)	IBREA, velox.re	2017-2018	Pilot completed	https://www.cookrecorder.com/ccrd-releases-blockchain-pilot-final-report/
36.	Zambia	Regional (Lusaka)	Medici Land Governance	2018 -	PoC ongoing	https://www.globenewswire.com/news-release/2019/05/22/1840827/0/en/Medici-Land-Governance-Signs-MOU-with-Lusaka-City-Zambia-to-Develop-and-Deploy-a-Land-Governance-Platform-and-Support-Property-Title-Issuance.html https://www.conftool.com/landandpoverty2019/index.php/03-03-Larson-1124_ppt.ppt?page=downloadPaper&filename=03-03-Larson-1124_ppt.ppt&form_id=1124&form_index=2&form_version=final

**TABLE 2: MAPPING OF LARGE-SCALE DIGITALIZATION PROJECTS IN THE LAND SECTOR
(IN COUNTRIES CLASSIFIED AS LOW OR MEDIUM HUMAN DEVELOPMENT ON UNDP'S HUMAN DEVELOPMENT INDEX)**

No.	Country	Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/agencies	Donor contribution/cost of digitalization component	Links
1.	Bangladesh	Promoting Access to Land in Bangladesh/ Digital Land Management System (DLMS) project	Integrated Digital Land Recording System (IDLRS)/ Digital Land Management System (DLMS)	2011-2017	EU	NIRAS	€10.000.000	https://eeas.europa.eu/delegations/bangladesh_en/18880/ https://www.niras.com/media/10910396/land_final-compressed.pdf
2.	Cameroon	Cadastre Modernization and Business Climate Support Project (PAMOCCA)	Digital mapping, digital land registry	2011-2020	African Development Bank	IGN FI	US\$10.000.000	https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/CAMEROON-Support_Project_for_Modernization_of_the_Land_Registration_System_and_Business_Climate-Appraisal_Repo_.pdf https://www.ignfi.fr/en/portfolio-item/appui-modernisation-cadastre-cameroun/
3.	Cape Verde	Land Management for Investment Project	Digital registry (Land Management Information and Transaction System/ LMITS)	2012-2017	Millennium Challenge Corporation (MCC)	DAI Global	US\$17.000.000	https://www.mcc.gov/resources/story/section-cvii-star-report-land-project
4.	Ethiopia	Climate Action through Landscape Management (CALM)	National Rural Land Administration Information System (NRLAIS)	2019-2024	World Bank		US\$14.000.000/ US\$84.000.000	http://documents1.worldbank.org/curated/en/949841560736884940/pdf/Ethiopia-Climate-Action-through-Landscape-Management-Program-for-Results-Project.pdf

No.	Country	Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/agencies	Donor contribution/cost of digitalization component	Links
5.	Ethiopia	Responsible and Innovative Land Administration of Ethiopia (REILA), Phase 1 +2	National Rural Land Information System (NRLAIS)	2011-2021	Finnish Ministry of Foreign Affairs	NIRAS, Hansa Luftbild AG	€19.600.000	https://www.niras.com/development-consulting/projects/land-registration-in-ethiopia/
6.	Ethiopia	Land Investment for Transformation (LIFT)	Land Administration System (RLAS)/ NRLAIS	2014-2021	DFID	DAI, NIRAS, Nathan Associates, GIRDC	£72.704.000/ £3.000.000	https://devtracker.fcdo.gov.uk/projects/GB-1-202900/documents
7.	Ethiopia	Support to Responsible Agricultural Investments in Ethiopia” (S2RAI), Phase I + II	Facilitate and monitor land-based investments through the Commercial Agricultural Management Information System (CAMIS), e-services, linked to NRLAIS	2016-2024	BMZ, EU		€10.175.000	https://www.giz.info/en/downloads/2020-05-Projektinfo_GV%20Land_%c3%84thiopien_EN.pdf https://landportal.org/library/resources/building-harmonized-private-and-state-land-data-and-information-systems-ethiopia
8.	Ghana	Land Administration project 2 (LAP2)	Digital land registry (Ghana Enterprise Land Information System/GELIS), e-services	2011-2020	World Bank		US\$50.000.000/ US\$19.000.000	https://projects.worldbank.org/en/projects-operations/document-detail/P120636
9.	India	Digital India Land Records Modernization Programme (DILRMP)	Digital land registry and cadaster	2008-(ongoing)				http://dilrmp.gov.in/

No.	Country	Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/agencies	Donor contribution/cost of digitalization component	Links
10.	Indonesia	Program to Accelerate Agrarian Reform (One Map Project)	Digital mapping/ registration, digital land registry and cadaster (eLand), e-services	2018-2023	World Bank	Kadaster Int.	US\$200.000.000/ US\$48.000.000	http://documents.worldbank.org/curated/en/393931532143851037/pdf/Indonesia-One-Map-PAD-06262018.pdf
11.	Ivory Coast	Land Policy Improvement Project	Digital land registry and cadaster, land e-services	2018-2023	World Bank		US\$50.000.000/ US\$18.000.000	http://documents.worldbank.org/curated/en/158861522699104205/pdf/COTE-DIVOIRE-PAD-NEW-03092018.pdf
12.	Kenya	Digitization of Land Registries	Digital land registry, e-services	2014/2015-			US\$4.600.000	https://lands.go.ke/programmes-and-projects/ https://www.reuters.com/article/us-kenya-landrights/kenyan-lawyers-wrangle-with-government-over-land-registry-digitization-idUSKBN1181K1
13.	Laos	Land Management and Decentralised Planning	Digital land registry/ cadaster (Lao LandReg)	2014-2021	BMZ	GIZ	€12.424.110	https://www.giz.de/projektdaten/projects.action?request_locale=de_DE&pn=201621929 https://landportal.org/library/resources/systematic-land-registration-rural-areas-lao-pdr-concept-document-countrywide
14.	Laos	Enhancing Systematic Land Registration Project	Digital land registry/ cadaster (Lao LandReg)	2020/21- (planning phase)	World Bank		US\$25.000.000	https://projects.worldbank.org/en/projects-operations/document-detail/P169669 https://www.worldbank.org/en/programs/korea-world-bank-group-partnership-facility/brief/kwfp-tf0b2449
15.	Liberia		Digital Land Information Management System (LIMS)	2020-		Medici Land Governance (MLG)		https://mediciland.com/1544-2/ https://mediciland.com/projects/monrovia-liberia/

No.	Country	Name of project Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/agencies	Donor contribution/cost of digitalization component	Links
16.	Madagascar	Agriculture Rural Growth and Land Management Project (component on land policy and land rights registration)	Digital land registry	2016/19-2022	World Bank		US\$47.400.000/ US\$2.300.000	https://projects.worldbank.org/en/projects-operations/document-detail/P166133 http://documents.worldbank.org/curated/en/705911551754907069/Madagascar-Agriculture-Growth-and-Land-Management-Additional-Financing
17.	Mozambique	Mozambique Land Administration Project (Terra Segura)	Digital mapping, Land Information Management System (SiGIT), e-services	2018/19-2024	World Bank		US\$100.000.000/ US\$8.700.000	https://projects.worldbank.org/en/projects-operations/document-detail/P164551 http://documents.worldbank.org/curated/en/690511544238091029/pdf/Mozambique-PAD-P164551-for-Board-11132018-636798168819424015.pdf
18.	Nepal		Digital land registry	2015-	Asian Development Bank			https://www.conftool.com/landandpoverty2019/index.php/06-11-Bhatta-389_paper.pdf?page=downloadPaper&filename=06-11-Bhatta-389_paper.pdf&form_id=389&form_version=final https://kathmandupost.com/national/2018/08/28/land-revenue-data-goes-digital
19.	Nicaragua	Second Land Administration Project (PRODEP II)	Integrated Cadastre Registry Information System (SIICAR), e-services	2013-2020	World Bank		US\$58.000.000/ US\$14.600.000	http://documents.worldbank.org/curated/en/809621496169075161/Nicaragua-Second-Land-Administration-Project-additional-financing

No.	Country	Name of project Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/ agencies	Donor contribution/ cost of digitalization component	Links
20.	Nicaragua	Property Rights Strengthening Project	Cadaster Registry Information System (SIICAR), e-services	2008-2024	World Bank		US\$50.000.000/ US\$12.750.000	http://documents1.worldbank.org/curated/en/895431521338507774/pdf/PAD2598-clean-02262018.pdf
21.	Nigeria	Systematic Property Registration Program; under: Kaduna State Economic Transformation Program-For-Results	Digital land registry	2016/17-2021	World Bank		US\$40.000.000	https://www.kadgis.org/ http://documents.worldbank.org/curated/en/551311498183420726/pdf/P161998-PD-06-01-17-06012017.pdf
22.	Pakistan	Punjab Land Records Management and Information Systems Project	Digital land registry, e-services	2007-2016	World Bank		US\$115.000.000/ US\$84.000.000	http://documents.worldbank.org/curated/en/488611499886532325/pdf/ICR00003719-06212017.pdf https://rodportal.punjab-zameen.gov.pk
23.	Rwanda	Transformation of Agriculture Sector Program 4 Phase 2	ALIS 2 and Smart Agriculture Information System (SAIS), e-services	2018-2021	World Bank		US\$26.000.000	http://documents1.worldbank.org/curated/en/402011527823870045/pdf/RWANDA-PAD-05092018.pdf http://www.fonerwa.org/sites/default/files/Rwanda_Strategic_Plan_for_Agriculture_Transformation_2018.pdf
24.	Rwanda	Private Sector Driven Agricultural Growth (PSDAG) Project	Land information database and online platform for investors - Agriculture Land Information System/ALIS, e-services, linked to LAIS	2014-2019	USAID	RTI Int.		https://www.evalforward.org/sites/default/files/2020-07/Final%20PSDAG%20Evaluation%20Report_4Aug2018_0.pdf https://www.agrilinks.org/post/enabling-responsible-private-investment-rwanda

No.	Country	Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/agencies	Donor contribution/cost of digitalization component	Links
25.	Rwanda	National Land Tenure Regularisation Programme (NLTRP)	Digital mapping, land registry (Land Administration Information System/LAIS)	2009-2019	DFID, EU, SIDA, Netherlands	Kadaster Int. (since 2018)	£31.368.000/ ~ £9.000.000	https://devtracker.dfid.gov.uk/projects/GB-1-200284/documents https://www.conftool.com/landandpoverty2019/index.php?page=downloadPaper&ismobile=true&filename=01-05-Byamukama-214_paper.pdf&form_id=214&form_version=final
26.	Tanzania	Private Sector Competitiveness Project (sub-compoment: Land Administration Reforms)	Integrated Land Management Information System (ILMIS)	2015-2018	World Bank	IGN FI	US\$35.200.000/ US\$14.000.000	http://documents.worldbank.org/curated/en/695891554411693994/pdf/Tanzania-Private-Sector-Competitiveness-Project.pdf https://www.ignfi.fr/wp-content/uploads/2018/07/Tanzanie.Ilmis_EN_201806-min.pdf
27.	Tanzania	Land Tenure Support Programme	Digital mapping/ registration, digital registry	2014-2018	DFID, DANIDA, SIDA		US\$15.200.000	https://devtracker.dfid.gov.uk/projects/GB-1-202843/documents
28.	Tanzania	Land Tenure Improvement Project	Integrated Land Management Information System (ILMIS), e-services	2020/21- (planning phase)	World Bank		US\$150.000.000	http://documents1.worldbank.org/curated/en/934461589985643361/pdf/Project-Information-Document-Land-Tenure-Improvement-Project-P164906.pdf
29.	Tanzania	Feed the Future Tanzania Land Tenure Assistance	digital mapping/ registration (Mobile Application to Secure Tenure/ MAST) and digital registry (Technical Register under Social Tenure/ TRUST)	2015-2019	USAID	DAI Global	US\$6.600.000	https://www.land-links.org/wp-content/uploads/2018/03/USAID_Land_Tenure_LTA_Inception_Report.pdf https://dai-global-developments.com/articles/using-mobile-technology-for-first-registration-of-land-lessons-learned-in-tanzania?utm_source=related-box

No.	Country	Name of project	Focus (digitalization)	Time-frame	Donors	Involved companies/agencies	Donor contribution/cost of digitalization component	Links
30.	Uganda	Land Administration Reform (component of Competitive-ness and Enterprise Development Project)	National Land Information System (NLIS)	2013-2023	World Bank	IGN FI	US\$54.000.000/ US\$28.900.000	http://documents.worldbank.org/curated/en/409061468308685658/pdf/751720PAD0P13000900IDA0R20130009601.pdf https://www.ignfi.fr/en/portfolio-item/systeme-information-foncier-national-ouganda/
31.	Vietnam	Project for Improved Land Governance and Databases (VILG)	Multipurpose Land Information System (MPLIS) and Land Database, e-services	2016-2021	World Bank		US\$150.000.000/ US\$160.000.000	http://documents.worldbank.org/curated/en/696171467818164180/pdf/PAD1780-REVISED-OUO-9-IDA-R2016-0166-2.pdf



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