

# IMUKA OYERWANEHO!

Ekihandiiko kirikuhabura ahaby'okwerinda  
kw'abarikurwanirira n'okurinda obugabe  
bw'abantu omuri Africa



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## Ekihandiiko kirikuhabura ahaby'okwerinda kw'abarikurwanirira n'okurinda obugabe bw'abantu omuri Africa

Kikashohozibwa Okwakabiri2017

East and Horn of Africa Human Rights Defenders Project | HumanRightsHouse  
Plot1853 | LulumeRoad | Nsamba | P.O.Box70356 | Kampala | Uganda

**Phone:** +256 (0)393 265 820 | +256 (0)414 510 263

**E-mail:** program@defenddefenders.org | executive@defenddefenders.org

**Web:** www.defenddefenders.org

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Okusiimwa kushemereire kuza aha porogyekiti erikurwanirira obugabe  
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Mwimukye! Obugabe bw'amaka gaitu, abantu abari omu myanya ei turikutuuramu n'obw'abatuuze bagyenzi baitu nibuteekwa kurindwa. Kandi naiwe omwe oshemerire kuburinda! Beine obugabe kutuura n'iehoreere, bakashemerererwa omu busingye, bakagamba hataine orikubateera aha mukono, bakatuura omu myanya mirungi y'emiyonjo, okushemerererwa omu bwebembeezi obu beesiimiire n'obu beetooraniire... Omu bugufu, bashemereire kushemerererwa omu kuragaanisa kw'amahanga gaabo okwakozirwe omu kihandiko ky'ensi yoona ekirkworeka ebikuru ebirikukwata aha bugabe bw'abantu omunsi yoona.

Kwonka omu Africa obugabe obu tikyanguhi kubutonganirira. Okurwanirira obugabe bw'abantu timurimo gwanguhi kukora. Abarikurwanirira obugabe bw'abantu omu Africanibatiinatiisibwa, babonabonesibwa, bateebwa omu bihome, bateganisibwa barikubingwa omu myanya el barikutuuramu n'obumwe baitwa ahabw'omurimo ogu barikukora obwe barikuhanisa ebikorwa nari embeera etari nungi.

Waashomire amahuri? Kuruga omu ihanga rya Algeria kuza Zimbabwe nitureeba ekishushani kyona ekiri ahagati y'eniyuguta kuruga ahari A-Z ab'okutwariza kubi abantu n'enkora y'okukozesa amaani mingi barikuremesa abantu okweteerana nari okwerundaana n'okubabuza obugambiro ahabw'ebi barikwetaaga ahabw'oburungi bw'embeera yaabo.

N'obu hariho entaaniso omu kubonabonesibwa, n'omu mahanga agarikukizayo okutunguuuka, agagunjukire kandi againe demokurase ehami noija kuteganisibwa omurimo gwawe gwateganisa ebigyendererwa by'ab'obushoborozi.

Ekikwato ky'okukyendeeza akabi aku orikuba orimu omu kuhikiiriza ebigyendererwa byawe kiri omungaro zaawe. Okikozese kwetegyereza embeera embi ezitarikukwikiriza n'enungi ezirikukushagika

omu kukora emirimo yaawe, manya ebizibu byawe kandi oteeho embeera erikubaasa kukurabya ahagumire.

Ekikwato eki kirimu ebitabo bibiri ebihandiikirwe kuhikiiriza emiringo yoona ekwatiraine n'eb'y'okwerinda ei orikubaasa kubugana omu magara gaawe nk'omuntu, ebyokwerinda ebikwatiraine n'ekitongore kyawé nari embeera y'obuhangwa hamwe n'omu kukozesa ebyoma bya karimagine yaawe omu magara gaawe.

**Ekitabo Ky'okubanza** nikikwata aha puraani y'eb'y'okwerinda kwawe nk'omuntu, omubiri gwawe n'ekitongore kyawé. Yega kumanya n'okuteera puraani y'ebintu bikuru omuby'okwerinda hamwe n'ebirikubishagika aha rurengó rw'ebyanga n'orw'ensi yoona ahabw'abarikurwanirira obugabe bw'abantu.

**Ekitabo Kyakabiri** nikikwataahaby'okwerinda ebiine akakwate n'ebyma byawe bya karimagine eby'orikukozesa omu by'esente n'empurizana. Yongera okugira emishomo y'entwaza y'eb'y'okwerinda omu by'enkozesza y'ebyma bya karimagine erikwetegyereza akabi akarikubaasa kureetwa ebyoma ebi orikukozesa ahu orikukorera kandi oyegye ebikuru ebi oshemerire kukora omu kukingaho omwanya ogu orikukorera emirimo yaawe y'okurwanirira obugabe bw'abantu nk'oku orikukikora aha simu yaawe, kompyuta, endagiriro za *email, websites, social media*, n'ebindi.

Ebirikuhaburwa omu bitabo ebi byombi bite omunkora omu magara gaawe goona kandi oshagike nabagyenzi baawe n'abantu omu myanya ei orikutuuramu nabo kuba nikyo bakora reero naija kureeba ebirungi ebirije nakyo nk'obwegyendesereza omuby'okwerinda, eby'empurizana birungi hamwe n'okukora puraani omu bantu abari omu myanya erimu abarikurwanirira obugabe bw'abantu hamwe n'okurahukira okwirukagirira haagira obuzibu obwagwaho.

Mwimukye! Murekye tukikore hamwe kandi tukikore omu muringo gw'obusingye.

# ENTANDIKIRO

Amasimu agarikuteerwa garikutiinisiriza, okuteerwa, okutiinisiriza ab'amaka gaawe byona byine ekigyendererwa kimwe: Okukiingira abo abarikwerinda kuruga omu kutinatiinisibwa oku babaase kwombeka obushoborozi bwabo okukora emirimo yaabo omu busingye kandi kurungi.

Okucwekanisa omu kyanga ky'omu burugw'eizooba hamwe n'omu eihembe rya Africa, tworekire ebintu ebirkwerariikiriza ebirkuteganisa omurimo gw'abarwanirizi b'obugabe bw'abantu. Ebi harimu okweyoongyera kw'okurebuuza enkora yaabo ey'eba karimaginezi, okuteganisa ekitongore ky'abaramuzi hamwe n'okubataho emanja ezitariyo ez'ebishuba hamwe n'okutinatinisiriza abarwanirizi b'obugabe hamwe n'amaka gaabo, okukuratira munonga ebitongore ebitari bya gavumenti, okutunga amakuru kurabira omukuhenda za ofisi nari okukwata ebihandiiko n'ebindi bingi munonga.

Omumirimo yeitu eyabureijo n'abarwanirizi b'obugabe bw'abantu, tushangire ngu omu kukunda kwabo okurinda abandi, tifyabureijo abarwanirizi b'obugabe bw'abantu okwebwa nari obutafa ahaby'okwerinda byabo. Kwonka, nka mutahi wangye omurwanirizi w'obugabe bw'abantu kandi munywani wangye oku yaagambireho rimwe, 'Torikubaasa kuhwera abandi waaba ofiire.' Eby'okwerinda hati eky'obushasi bihindukire ebigumire hamwe n'eba tekinorogia obutarindwa gye, obwahati ebihandiiko byeitu hamwe n'ebokwerinda nibiteganisibwa gavumenti hamwe n'ebitongore ebitari bya gavumenti omunsi.

Okurinda kutaho oburyo omuby'okwerinda eky'obusaasi kihindukire omurimo mukuru ogw'abarwanirizi b'obugabe bw'abantu omu burugw'eizooba hamwe n'omu eihembe rya Africa kandi nk'abarwanirizi b'obugabe bw'abantu, twine obujunanizibwa ahari itwe twentyini hamwe naabo abuturikuheereza okuteekateeka ahari eki.

Okweyoongyera kwa intanet okuhanguha juba, kyayoongyera aha kizibu eki. Abarwanirizi b'obugabe bw'abantu bakoziise tekinorogiya ensya kurungi munonga kandi omu magyezi okugamba aha kubonaabonesa hamwe n'okurubatirira obugabe bw'abantu ebyakubaasize kurabaho bitamanyirwe hamwe n'okuteebwa omu borthandiko. Beitu, enkora egi ensya nabwo n'etumurika omu bizibu ebendi.

Defend Defenders ekatandikwaho okurinda abarwanirizi b'obugabe bw'abantu abari omu kabi kahonaaho. Kwonka, obuhangu obutwine omubiturbiremu butushomiise ngu bingi nibibaasa kukorwa okutantara abarwanirizi b'obugabe bw'abantu okuhika omu mbeera egi embi munonga. Omukuteekateeka aha by'okwerinda byabo n'obwegyendesereza, okutunguura enteekateeka z'eb'y'okwerinda ezihamu hamwe n'okuzigyenderaho gye, abarwanirizi b'obugabe bw'abantu abarikukorera omu mbeera embi munonga nibabaasa okuhindura akabi akibarikubugana nk'abantu buntu nari ebitongore.

Amakuru garikujanjaara omu mashaza, niimpiiga bataahi bangye boona abarikurwanirira obugabe bw'abantu, okuta ebi baayega aha mutima.



Ninye,

Hassan Shire

- Executive Director of Defend Defenders (the East and Horn of Africa Human Rights Defenders Project)
- Chairperson of the Pan-African Human Rights Defenders Network.



# EKITABO I

OKWERINDA N'OBWEBEMBEZI OMUBY'OKWERIDA



Book one is based on the concepts introduced in “New Protection Manual for Human for Human Rights Defenders and Guide for Facilitators” of Protection International and “Workbook on Security: practical steps for human rights defenders at risk” of Front Line Defenders

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# **ENTANDIKIRIRO**

## **Obwebembezi omuby'okwerinda oku burikuteebekanisibwa n'okuteebwa omu nkora**

Okuhinguza ekihandiiko ky'endagaano y'Amahanga Ageeteereine aha barikurwanirira obugabe bw'abantu ekya 1998 hamwe n'okuheereza obushoboorozi Omujwekyerwa w'Omotaano w'ekibiina ky'Amahanga Ageeteeraine (UN) ahabw'embeera y'abarikurwanirira obugabe bw'abantu omu mwaka 2000 nikitaho akamanyiso k'amaani omu kurinda abarikurwanirira obugabe bw'abantu okwetoorora ensi yoona. Hoona baitu abarikurwanirira obugabe bw'abantu nibakigumizamu kubugana okutiinatiinisibwa n'okweshanga omu kabi n'obu hariho emihanda y'okubarinda egi.

Om u Africa yoona, abarikurwanirira obugabe bw'abantu abarikukora kutunguura n'okurinda obugabe bw'abantu omu myanya erimu emivuyo y'eb'yobutegyeki emirundi emingi nibeeshanga omukabi kahango, akarimu okwitwa, okutaahirirwa, okuteerwa, okukwatwa bakakomwa, okutiinatiinisibwa hamwe n'okuzibirwa kugamba omu myanya y'abantu baangi. Amahanga burijio nigaremwa kucondooza okubonabonesibwa n'okuteganisibwa kw'abarikurwanirira obugabe bw'abantu.

Okureeba ngu eby'okwerinda byabo birigye n'omurimo gwabo kugumizamu, abarikurwanirira obugabe bw'abantu bateireho enkora y'okukuma eby'okwerinda by'abantu buntu n'ebitongore barikwetegyereza obuzibu oburiho n'okutaho emihanda ehami kubaasa kuzibira oburemezi obwakubaasa kuba nibwenda kubahikaho.

Okuhayo obwire n'ebikozesibwa kukuuma eby'okwerinda nikihwera abarikurwanirira obugabe bw'abantu kugumizamu n'emirimo yaabo y'eb'yobugabe bw'abantu n'okureeba ngu beine obusingye n'eb'yokwerinda byabo birigye.

Ekitabo ekyahandiikirwe aba porogyekiti erikurwanirira abarikurwanirira obugabe bw'abantu eya DefendDefenders (the East and Horn of Africa

human rights defenders project) ekirkwecumintiriza ahaby'oby'okwerinda kigyendereire kukozesibwa nk'ekikwato ahabw'abarikurwanirira obugabe bw'abantu omu kicweka kya burigwa-izooba n'amatemba ga burigwa-izooba bwa Africa kubaheereza enkora erikwetaagisa n'oku baakubaasa kutwazamu embeera etari nungi el barikukoreramu.

Ekitabo nikyoreka ebi abari omu hururu y'okuwanirira Abarikurwanirira bugabe bw'abantu barabiremu omu mwaka gumwe n'okukiraho, amaani bagatiire aha kureeba ngu abarikurwanirira obugabe bw'abantu beine obusingye, eby'okwerinda byabo birigye kandi baamanya oku bashemereire kwerinda barikurabira omu kutendekwa aha ntwaza y'eb'yokwerinda, n'okubaheereza eby'okukozesa n'ebi bashemereire kugyenderaho omu by'okwerinda kw'abarikurwanirira obugabe bw'abantu abari omu kabi munonga n'okuheereza ebitongore byabo obushagiki. Kikatebekanisibwa abari aha kakiiko akarikureeberera eby'okwerinda omu kitongore ky'okurinda n'okurwanirira abarikurwanirira obugabe bw'abantu, n'obuhwezi burikuruga omuri bagyenzi baabo abari omu mikago y'okurwanirira obugabe bw'abantu aha rureng rw'amahanga hamwe n'omu byanga.

Ekitabo eki nikyongyererera aha bindi ebitwireho aha bwebembezi bw'eb'yokwerinda nk'oku kirikwecumintiriza aha magyezi g'entwaza y'eb'yokwerinda hamwe n'ebikwato ahabw'abarikurwanirira obugabe bw'abantu omu kyanga kya burigwa-izooba n'amatemba ga burigwa-izooba bwa Africa hamwe na Africa yoona.



# OKUSHOBORORA AMAKURU G'EBIGAMBO

## NOOHA ORI OMURWANIRIZI W'OBUGABE BW'ABANTU?

Abarwanirizi b'obugabe bw'abantu n'abo abantu oba ari omwe nari arikukora n'abandi barikukora kutunguura nari kurinda obugabe bw'abantu nk'oku kiri omu kihandiiko ky'endagaano y'ekibiina ky'Amahanga Ageetereine aha bugabe bw'abantu ekya 1948. Ekihandiiko eky'endagaano y'Amahanga Ageetereine aha barikurwanirira obugabe bw'abantu ekya 1998 nikigamba aha bantu buntu, za guruupu n'ebigombe by'abeeteereine oku barikukora omurimo muhango okureeba ngu okuribatirira obugabe bw'abantu n'obusingye bwabo bw'enzaarwa kwahwaho.<sup>1</sup>

Buri omwe weena naabaasa kuba omurwanirizi w'obuntu otire aha rubaju eky'orurengorw'obwegyes bwe, ebishushaniirizo by'omurimo gwe, oba mushaija nari omukazi, omuto nari mukuru, oruganda rwawe nari obukomooko bwawe nari eihanga eri orikurugamu. Omutembeyi orikuguriza aha ruguuto nari orikuguza ebitookye yaarugayo akajumiirira oku abarikuhoza omushoro barikubonabonesa abatembezi bagyenzi be; naatwarwa kuba omurwanirizi w'obugabe bw'abantu. Obumwe n'obumwe, abarikurwanirira obugabe bw'abantu nibabaasa kushangwa omu bitongore by'abantu buntu nari omu gavumenti. Ebikorwa byona ebirikukorwa abarwanirizi b'obugabe bw'antu nibiteekwa kuba nibikorerwa omu busingye.

## OKUSHOBORORA AHA BY'OKWERINDA, OKUBAGYE OMU BUSINGYE HAMWE N'OBUKUMI

Okwetegyereza kurungi ebigambo ebi ebikwatiraine n'ebi'okwerinda, okubagye omu busingye hamwe n'obukumi kandi n'okwetegyereza akakwate hamwe n'entaaiso ebiri ahagati y'ebigambo ebi, nikija kuyamba abarikurwanirira obugabe bw'abantu hamwe n'abari omu murimo ogu kubaasa kushwijuma akabi akagurumu kandi bateho oburyo n'entwaza y'ebi'okwerinda<sup>2</sup> ehikire n'okubaasa kugiteeka omu nkora.

## Eby'okureeberaho by'emihanda y'okwerinda harimu:

- Okutaho entwaza y'oku abagyenyi barikwja;
- Kamera z'ebi'okwerinda ezirikumanya nka (CCTV) z'okuguma nizireeba ebirikubaho n'okuteera ekide;
- Okuzitiza singyengye erikukozesa amashanyarazi;
- Okugira ebyoma by'okuraaza omuriro;
- Okugira akabokisi akarimu ebintu by'obujanabi oburikubandizibwaho

"Om u bwesharingo obwabiareho Omukwamwenda 2013 omu ihanga ryangye, abarwanirizi b'obugabe bw'abantu bakaitwa, baakomwa, kandi baateerwa kubi munonga barikuteerwa pooriisi n'ebindi bitongore by'ebi'okwerinda ahabw'okuba titurateekateekire aha by'okwerinda kwaitu, tituragyereze kumanya akabi akaabaire kariho kandi titurabaasize kuteekateeka eky'okutaho oburyo bw'ebi'okwerinda kubaasa kuzibira akabi koona akaabaire kagyendereire kubaho."

## AHABWAKI OKUTEBEEKANISA EBY'OKWERINDA KIRI KIKURU AHABW'ABARIKURWANIRIRA OBUGABE BW'ABANTU?

Abarikurwanirira obugabe bw'abantu bo nk'abantu abarikwehayu kurinda obugabe bw'abandi emirundi mingi nibaba bari omu kabi, kandi nabo obugabe bwabo bukuru nk'abantu obwire obwingi niburibatirirwa.

Omuri burigwa-izooba n'amatemba ga burigwa-izooba bwa Africa, ekitongore kya DefendDefenders (Rwaniriria Abarikurwanirira obugabe bw'abantu) kireebire abarikurwanirira obugabe bw'abantu barikumbwa bakaitwa, bakabonabonesibwa,

1 The Declaration's full name is the "Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms" though commonly referred to as "The Declaration on Human Rights Defenders" <http://www.ohchr.org/EN/Issues/SRHRDefenders/Pages/Translation.aspx>

2 . Front Line Defenders, 'Workbook on security: Practical Steps for Human Rights Defenders at Risk' 2011, <https://www.front-linedefenders.org/en/resource-publication/workbook-security-practical-steps-human-rights-defenders-risk>, Accessed 23 June 2016.

bakateerwa, bakakwatwa ekitaraariire kandi bakakomwa, bakatiinatiinisibwa kwaitwa, bakaharanwa, bakababeeherera ebitariho n'okubataho kampeyini z'okubasiiga ebyondo, hamwe n'okubafundiriza aha bugabe bwabo kubaremesa okugira obusingye bw'okutambura ahu barikwenda, okugamba eki barikwenda, okweteerana nari kwerundaana omu busingye.

Abarikurwanirira obugabe bw'abantu hoona bakizire kuba ebitambo ahabw'okubeehererwa ebitariho, n'okubavunaana bakabacwera emanja hatariho buringaaniza. Kandi abo abarikugyezaho kuhakanisa emishango y'ebigingirire, nk'ekyokureeberaho, abarikuba nibakora ahaby'obugabe bw'abakazi hamwe n'obugabe bw'abantu abarikuza omu bya rukundo n'abantu b'obuhangwa butari bumwe nabumwe nka: ebitingwa - abashaija n'abashaija, abakazi n'abakazi nari embaju zombi, abantu abo obwire obwingi nibabuguna ebizibu bingi ebirkureetaho akabi.



**OBUSINGYE:** Omukazi naakoza omwana we okumurinda obutariibwa ensiri ekirikubaasa kureetera omwana okurwara omushwija gw'ensiri. Ensiri teine kigyendererwa kurwaza omushwija: Kureeka neetwara obukooko



**EBY'OKWERINDA:** Ab'eb'y'okwerinda bashatubaarumba kandi bakwata omunyamahurire mukuru obu yaabaire naakwata ebyabaire nibiyenda omumaisho omu keediimo ahabw'okweyongyera kw'emihendo y'eb'y'entambura hamwe n'ebintu bya burijo by'okukoza. Ow'eb'y'okwerinda akaba aine ekigyendererera kukora kubi omunyamahurire akamuhisaho akabi kubaasa kumuremesa kukwata obwa mushinja aha obugabe bw'abantu.

Entwaza nungi.. Okutwaza gye eby'okwerinda by'abarikurwanirira obugabe bw'abantu n'eky'omugasho gw'amaani omuri Africa, ahu entwaza y'eb'y'obutegyeki etuura etari nungi kandi n'omwanya gw'obugambiro gurikuguma nigukyendeera.

Enkora z'amateeka eziraho ahabw'okurinda abarwanirizi b'obugabe bw'abantu tizirikukora nk'oku zishemereire kuba nizikora nari abarikuzeetaaga tibarikuheebwa mugisha gw'okuzikozesa. Eky'ahamuheru, okutiinatiinisibwa aha barwanirizi b'obugabe bw'abantu nikuteebwa n'aha b'omumaka gaabo nari bagyenzi baabo. N'ahabwekyo, nihateekwa kuteebwaho emihanda endijio mingi y'okureeba ngu hariho eby'okwerinda.

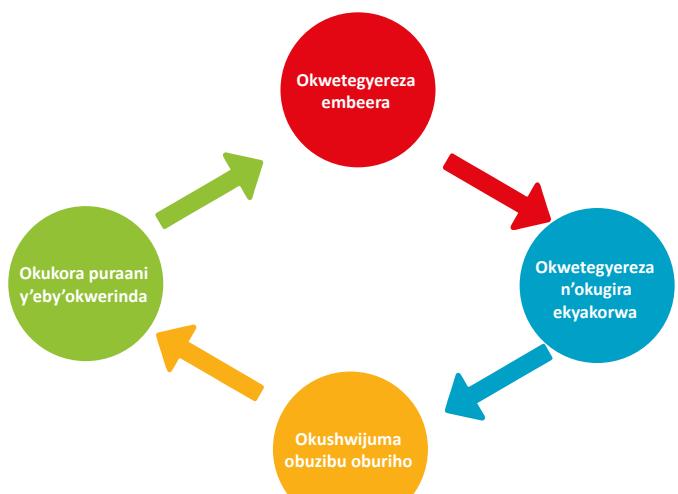
#### **OBUZIBU OBUKUKIRA KUBUGANWA... EBIZIBU N'EBIHKIRIZI EBIRIKUKIRA KUTEGANISA OBUSINGYE N'EBY'OKWERINDA KW'ABARIKURWANIRIRA OBUGABE BW'ABANTU**

N'obu baraabe nibabugana obuzibun'okutiinatiinisibwa ebyeline akakwate n'omurimo gwabo, bamwe aha barwanirizi b'obugabe bw'abantu nikibatwarira obwire kugira eki baakora ahabw'okukuma eby'okwerinda kwabo. Abamwe nibeekwasa obutabimanya nari obutagira bukugu nk'enshonga, kandi abandi torikuhrira ngu nikibaasika nk'oku baine emirimo

mingi nibabaasa kubonaho obwire kukora aha by'okwerinda kwabo. Okutagira okwegyesibwa nari okumanyisibwa aha buremeezi obu barikubugana, obutagira eby'okukozesa birikumara, hamwe n'obutafayo kugira obujunaanizibwa kureeberera eby'okwerinda byabo ebyo byona nizo nshonga ahaw'obutabaho eby'okwerinda ebitebeekanisiibwe kurungi.

#### **EMIHANDA Y'OKUKUMA EBY'OKWERINDA.**

Okukuma eby'okwerinda n'omurimo ogurimu okwetegyereza embeera y'abarwanirizi b'obugabe bw'abantu, okushwijuma n'okukora aha bibireho n'ebirikutiinisiriza kubaho omunshonga z'eby'okwerinda, okwetegyereza ebizibu ebiraho n'okukora puraani z'eby'okwerinda. Emihanda y'eby'okwerinda egi neekorera hamwe kandi neeyongyerera aha ndijo. Okushwijuma obuzibu oburikuba buriho nikirugiirira aha kwetegyereza



embeera kandi ogu nigwe musingye gwa puraani z'eby'okwerinda. Abarikukora omurimo gw'okurwanirira obugabe bw'abantu nibashabwa kuguma nibashwijuma enkora eyaagambwaho aha ruguru, ahaw'okuba okukuuma eby'okwerinda n'omurimo gurikugumizamu obwire bwona.

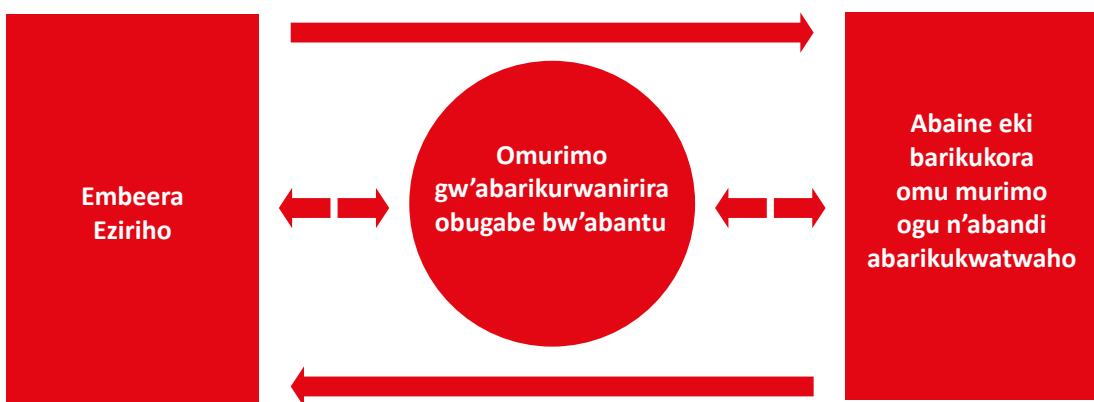


Okwerinda: Ebirikukorwa abarwanirizi b'obugabe bw'abantu nari abandi okwongyera kuhamya eby'okwerinda n'obusingye

## OKWETEGYEREZA EMBEEERA

Ahabw'okwenda kuhamya eby'okwerinda byabo abarikurwanirira obugabe bw'abantu nibateekwa kufayo kumanya n'okwetegyereza embeera eziraho, abantu abariho n'abandi abu kirikukwataho abarikubaasa kugira eki baakora ahonaaho nari bwanyima aha murimo gwabo nari kubareetera okuhikwaho akabi, nari kukabakingira. Baaba nibakora

omurimo gwabo, abarwanirizi b'obugabe bw'abantu kyanguhi kweshanga omu kabi n'ab'obushoboorozi. N'ahabwekyo nikikuru kureeba ngu enhongha nkuru omu mirimo yaabo ya burijo zaateekateekwaho kandi zaagyeryeranisibwa n'oku zaakubaasa kugira eki zaareetaho omu murimo gwabo.



### AHABWAKI KIRI KIKURU MUNONGA KWETEGYEREZA EMBEEERA

Embeera eriho niyo ntandikiriro ya buri kusharaho aha nshonga z'eb'y'okwerinda okurikukorwa. Obuzibu bw'eb'y'okwerinda obu abarikurwanirira obugabe bw'abantu barikubugana nibutaana kurugirira aha mbeera. Obuzibu nabwo bwonka nibuhinduka kandi nibuhinduka n'ebiri omu mbeera ey'omuntu arikuba arimu. N'ahabwekyo, okusharaho aha miringo y'okwenda nakyo nikirugiirira aha mbeera ezirkuba ziraho omubwire obwo. Eky'okureeberaho, n'obu obumwe n'obumwe kamera ezirkuteebwaho kuguma nizikwata ebirikubaho zirkubaasa kureeta akabi kubaho omu mbeera erikuba egumire, nabwe hoona nizibaasa kureetaho embeera etarikwetaagisa aha murwanirizi w'obugabe bw'abantu baaba babaire batakahikirweho okutiinatiinisibwa kw'omuringo gwona.

Abarikurwanirira obugabe bw'abantu tibarikubaasa kwetegyerezagye obuzibu obu barikubaasa kubugana baaba bateetegyereize kurungi embeera ei barikukoreramu. Okwenda kwetegyereza kurungi eby'okwerinda, nibateekwa kushushanisiriza enhongha z'eb'y'okwerinda ezi barikumanyaho n'ebyo ebiriyo nibibaho obwire obwo ahu bari yaaba ahonaaho nari bwanyima, kandi eky'ahamuheru eki baraihemu bakishushanirize n'embeera yaabo ei barimu.

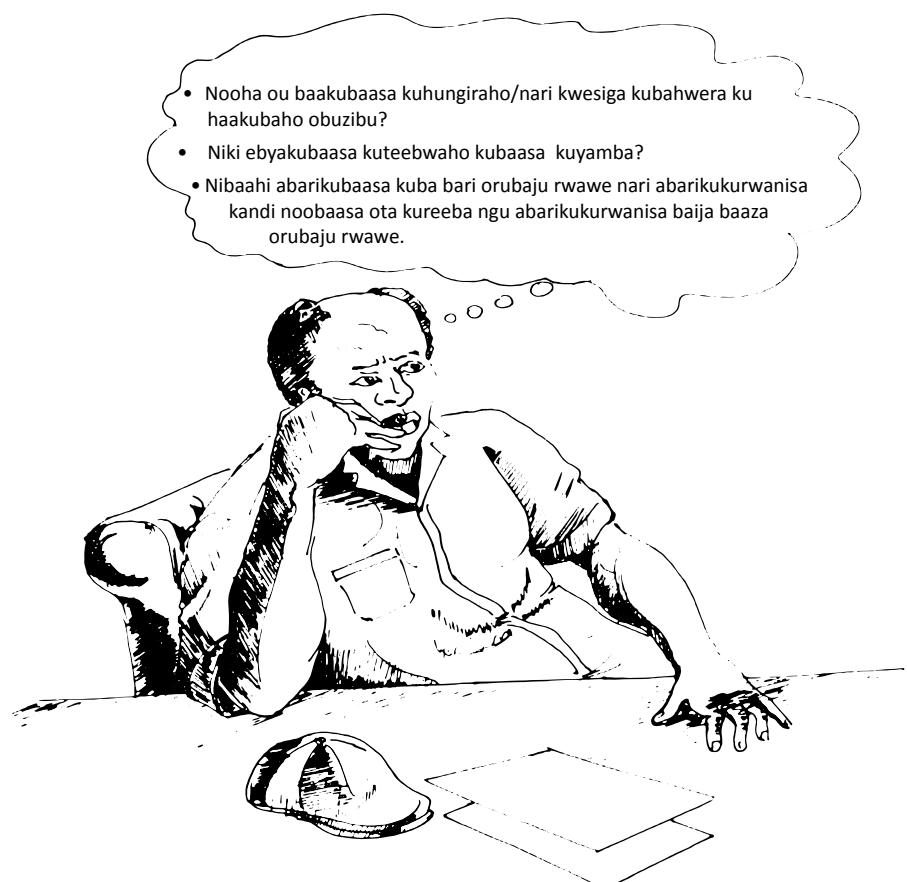
Okwetegyereza kurungi embeera kishemereire kuba nikyo kyagyenderwaho omu puroguraamu n'emirimo y'ekitongore, kandi kikahabura aha ntwaza, aha bwire, hamwe n'okukora puraani y'ebintu eby'okukoza. Eky'okureeberaho, omu mahanga agamwe omu kyanga eki, nka Somalia, nimuba mutaine buzibu munonga okukora emirimo yaanyu omuri za gurupu nkye z'abantu batarikurenga nka bataano omu myanya eyekiikire.



Ebantu bikuru ebi oshemereire kugyenderaho omu kwetegyereza embeera.

- **Embeeray'ebu'obutegyeki:** Buuza ebibuuzo kumanya nibaahi abari munonga omu by'obutegyeki; nibigyendererwaki byabo; ebi barikworeka n'ebibatarikworeka, hariho obutaikirizana kandi bwaba buriho, bukwatiraine ahariki, abakuru omu by'obutegyeki nibakoragana bata n'abarwanirizi b'obugabe bw'abantu kandi emirimo yaabo nibagitwara bata, n'ebindi nk'ebyo.
- **Embeera y'ebu'obuhangwa** Ebantu ebirkukwata aha nyikiriza z'obuhangwa, ediini, ebikorwa by'okuhenda ebiragiro, hamwe n'eniyikiriza z'ebu'obuhangwa bw'abantu abu orikurwanirira obugabe bw'abantu arikukoreramu, okukira munonga haaba harimu eby'obugabe bw'abakazi hamwe n'abantu abarikuza omu bya rukundo n'abantu b'obuhangwa butari bumwe nabumwe – obw'ebitingwa nk'abashaija n'abashaija, abakazi n'abakazi nari emabaju zombi.
- **Enshonga ya Tekinorogiya:** Omuringo gw'empurizigana namunonga ahu barikukozesa tekinorogiya na kompyuta (Ebirkukiraho ahari eki, nyaburawe juriza ekitabo kya II omu kihandiiko eki aha nshonga y'ebu'okwerinda omu bya tekinorogiya na kompyuta), hamwe n'ebu'entambura omu mwanya oguri omu kicweka ahu omurwanirizi w'obugabe bw'omuntu arikukoreramu nari ahu arikuteekateeka kukorera.
- **Enkoray'Ebiragiro:** Ebiragiro hamwe n'engyenderwaho y'eihanga rimwe nk'oku erikugamba n'oku birikukozesibwa, oku emanja z'abarwanirizi b'obugabe bw'abantu zitwire nizitwazibwa enyimaho; ninkoraki y'amateeka eriho erikukwata ahu abarwanirizi b'obugabe bw'abantu barikuranzya munonga omu kukora emirimo yaabo; ekitongore ky'oburamuzi nikorera aha mazima kitarikugwera rubaju?
- **Ezindi nshonga ezikwatirine n'embeera y'obuhangwa bw'ensi:** Okufayo ahaby'amagara g'abantu, embeera y'obwire, enshusha y'ensi ebirkubaasa kurugamu akabi nabyo bishemereire kushwijumwa.

Omukukora omurimo gw'okushwijuma embeera, abarikurwanirira obugabe bw'abantu bashemereire kwebuuza ebibuuzo ebi:



# EBIRIKUBAHO N'EBIRIKUBAASA KUBAHO OMU BY'OKWERINDA

Ekirikubaho nari ekirikubaasa kubaho omu by'okwerinda n'ekintu ekirikubaasa kuta amagara g'abarikurwanirira obugabe bw'abantu nari ebitongore byabo omu kabi. Ebirikubaho omu by'okwerinda nibireetaho amashomo ahabw'abarwanirizi b'obugabe bw'abantu hamwe n'ebitongore byabo aha kikirkubaasa kukora aha murimo gwabo hamwe n'ekirkubaasa kuba aha bingi ebi abantu bainemu amasiko.

Nibigaruka biheereza omugisha abarwanirizi b'obugabe bw'abantu n'ebitongore byabo okugarukamu kushwijuma eby'okwerinda n'obukuumi bwabo.

Eby'okureeberaho aha birikubaasa kubaho n'ebirkubaho:

- Obumwe n'obumwe, abantu niboohorezibwa omu ofiisi z'abarikurwanirira obugabe bw'abantu kumanya obwire oburikubareeta n'oburikubatwara kuruga omu ofiisi zaabo, entambura ei barikukozesa, erangi y'emotoka yaabo, n'ebindi.
- Okushohora kw'ebihama aha nshonga z'amaani nikibaasa kureeta obuzibu omu by'okwerinda nka okukomwa/okusibwa, okuhiganisibwa n'okutiinatiinisibwa kuruga aha muntu weena orikugambwaho kuba omu bikorwa by'okuribatiirira obugabe bw'abantu;
- Abagyenyi baaba batakyebeirwegye n'ebirkubakwataho kuteebwa omu buhandiikye, buri muntu weena naabaasa kutaaha omu ofiisi y'abarikurwanirira obugabe bw'abantu bakore ebihagaro nari bate eby'okwerinda kwabo omu kabi. Nibabaasa kubura n'okufubirwa ahabw'okuba nihaba hatariho buhandiikye kubashinja bakataayayiraho omwanya ogwo.

## OKU ORIKUTWAZA HAGIRA EKYABAHO NARI EKIRIKUBAASA KUBAHO OMU BY'OKWERINDA

Omugasho gw'omurwanirizi w'obugabe bw'abantu nigubaasa kupimirwa aha ku abarikurwanirira obugabe bw'abantu barikutwazibwa abantu omu kicweka kyabo. Haagira ekyabaho omu by'okwerinda,

orikurwanirira obugabe bw'abantu ashemereire kugira ebi yaakora kureeba ngu ekyabaho kyashoboororwa kurungi. Ebirkukorwa nibibaasa kutaana kurugiirira aha nshonga oku zirikutaana.

“Nkatunga obutumwa burikugira ngu noohwera abantu abarikuruga omu kicweka kya burengyerwa-izooba, nitumanya iziina ryawe, ahu orikutuura n'ahu orikukorera.”

## Eky'okukora 1: Okugamba Ekyabaho

Orikukora omurimo gw'okurinda obugabe bw'abantu haagira ekyamubaho nari eki yaareeba omu by'okwerinda ahonaaho ashemereire kuhayo ripoota ow'omuntu orikujunaanizibwa eby'okwerinda omu kitongore kye eki arikukorera omu mukuru w'ekitongore. Ebikuru omu ripoota egi bishemereire kuba<sup>3</sup>:

- N'oha orikuayo ripoota?
- Niki ekibaireho?
- Kibaireho nkahi? Kibaireho ryari?, Omu bufunze nk'oku kirikubaasika. N'oha ou kibaireho?
- Niki ekibireho omu bwijwire obwire ebwingi abu kibaireho?
- Ekibaireho abu kibaireho kibakozireki, na byona ebirkukwata aha mbeera ei barimu hati?
- Ekibaireho nooha okireeteire kyabaho, orikugamba ebibaireho omu bwijwire, nka omuhendo, ebikwato, abu bainebo akakwate, n'ekikozirwe bwanyima y'ebyo kubaho?
- Ebirkukwata aha mbeera oku eri hati omu bugufu na haaba hariho ebizibu nari bitariho.
- Ku haraabe hariho obuzibu niki ekishazirwemu kukorwa nari ekikozirwe eki ekihandiiko ky'entumwa y'omutaano ahabw'Amahanga Ageeteereine kirikugamba ngu kikorwe/eki akozire nari eki ashabire ngu kikorwe.

<sup>3</sup> KoenraadVanBrabant' Operational Security Management in Violent Environments' June 2000,Page 240,<https://sites.google.com/site/ngosecurity/GPR8.pdf?attredirects=0>



Okukora ripoota y'ekibaireho nikibaasa kukorwa omu buhandiikye nari omu kanwa omu bigambo. Kwonka hoona ekihandiiko aha bibaireho kishemereire kubaikwa omu buhandiikye okwenda kwehara okushanga ngu tihariho kihandiiko ky'obuhame aha bibaireho bikaheebwaho na ripoota. Abarikurwanirira obugabe bw'abantu nibahaburwa kureeba ngu baakozesa enkora y'empurizana etaine buzibu (ebirikukiraho ahari eki, nyaburawe juriza ekitabo II ky'ekihandiiko eki aha by'okwerinda omu kukozesa tekinorogiya na kompyuta.

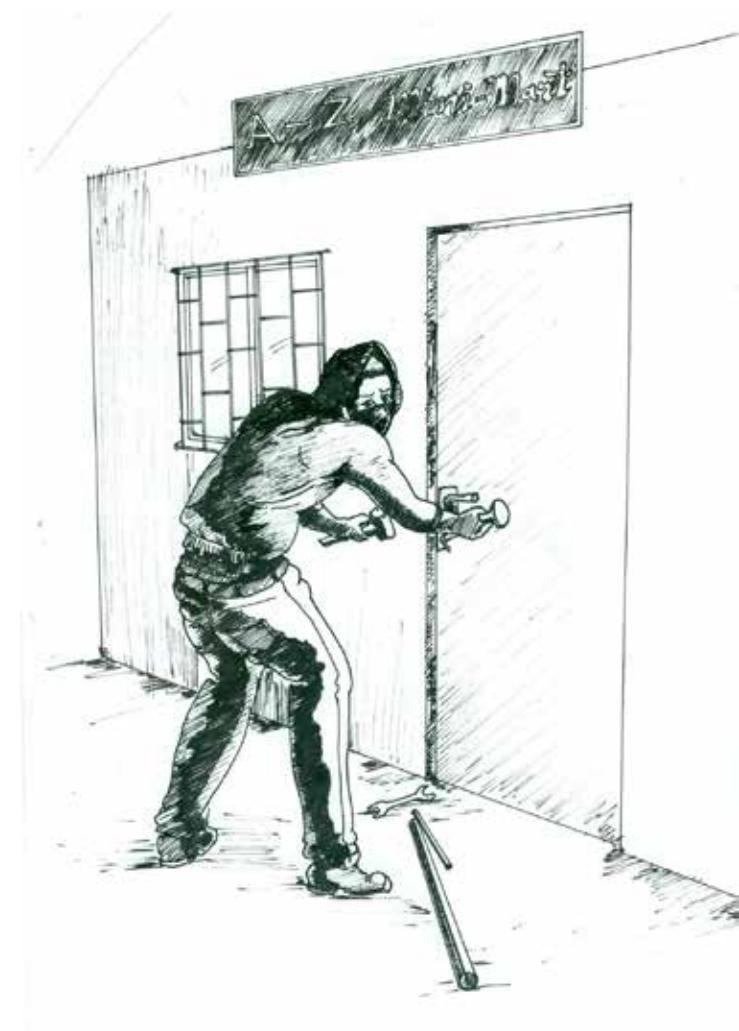
#### **Eky'okukora 2: Shwijuma ebihairweyo nk'obuhame bw'ebibaireho**

Waaba nooshwijuma ebihairweyo kuba bibaireho, hariho enhonga ezishemereire kuteebwaho amaani: nooha owaakuba ari omu kikorwa eki, enhonga y'eb'y'okwerinda eyaabaireho ekaba nkahi, hakabaho okuhutaazibwa kwona nari hariho ebintu ebyasiisirwe, niki ekyakubaasa kuba kyabaire kiri ekigyendererwa ky'abaakozire eki?

Eki nikyaija kuheereza okusharaho aha kirikurataho aha kirikubaasa kukorwa kandi ryari. Aha shaaha ego, oshamereire kumanya amaani g'ekyabaireho okwenda kumanya yaaba ekyabaireho kiri eky'amaani nari kitari ky'amaani.

#### **Ekyokukora 3: Okugira eki waakora nari Kutagira eki waakora**

Haabaho okwetegyereza kikashangwa ngu enhonga y'eb'y'okwerinda ebaireho eri ey'amaani, abarikurwanirira obugabe bw'abantu bashemereire kukora ekishemereire kukorwa. Ekirikorwa nikirugirira aha muringo gw'enshonga y'eb'y'okwerinda ebaireho. Haaba habaireho okuhenda office, hashemeirere kuteebwaho enkufuru ensya n'ezindi nkora nsya ez'eb'y'okwerinda. Enshonga y'eb'y'okwerinda ebaireho yaareebwa kuba etari y'amaani, abarikurwanirira obugabe bw'abantu nibabaasa kutagira eki baakora, kwonka bashemereire kuta enhonga y'ekibaireho omu buhandiikye kugira ngu kibe eky'okujuriza omubiro by'omumaisho.



"Ofiisi yangye ekahendwa kompyuta yangye ya laptop hamwe n'ebaruha z'abashaho ez'abantu abahikirweho ebikorwa by'okubonabonesibwa byatwarwa."

# OKWETEGYEREZA OBUZIBU OBURIKUBAASA KUREETAHO AKABI

Obuzibu oburikubaasa kureetaho akabi nibushoboororwa nka: "Okurangirira nari kworeka ekigyendererwa okuretaho akabi, okufubira nari okuhutaaza."<sup>4</sup>

## AHABWAKI ABARWANIRIZI B'OBUGABE BW'abantu Barikutiinatiinisibwa?

Abarwanirizi b'obugabe bw'abantu nibatiinatiinisibwa ahabw'okuba omurimo gwabo tigurikwikirizana n'ebigyendererwa by'abantu batari bamwe na bamwe. Abantu aba nibakozesa okutiinatiinisa nk'ekikwato kuhika aha bigyendererwa byabo bataine oku bashashuriire ebikorwa byabo. Okutwarira hamwe, okutiinatiinisa oku tikurikutwarwa nk'okw'amaani kuhisia haagira ou baahisyaho akabi. Okukora aha mbeera etarimu by'okwerinda, okwetegyereza okutiinatiinisa oku kurikubaho nikiija kuhwera abarwanirizi b'obugabe bw'abantu okutaho oburyo bw'okukikyendeeza.

Ebyokureeberaho ebirikworekwa ahaifo nibyoreka oku abarikwanirira obugabe bw'abantu barikuhikwaho okutiinatiinisibwa n'oku barikutwaza.

Omunyamakuru Mohammad orikukora n'ekitongore ky'amaani ky'eb'yamahurire naarwanirira obugabe bw'abantu kugamba hataine orikubateera aha mukono.

Akatandika kuteererwa esimu zitarikworeka namba kuruga aha mushaija arikumugira ngu arekyere aho omurimo ogu arikukora. Okwezi okwakurateireho, Muhammad ku yaabaire naataaha arikuruga kukora, akareeba abashaija mukaaga bamukuratiire aha muhanda gwe gwa burijo. Bakamurabaho kandi baamuragiira kwemerera, kwonka we akanga yaatandika kuteera enduuru, eyaahurize abantu abaatandikire kureeba ekirikugyenda omumaisho. Abashaija bakahunga.



### Ebirikutiinatiinisa ebirikugambwaho Nibyo Biha?

- Okuteererwa esimu zitarikworeka namba
- Okukuratirwa abashaija abu otarikunya
- Ekikorwa ky'enyini ky'okugyezaho kukwata/ Kubuzaho, kuhutaaza nari kwita Mohammad.

### Ekigyendererwa ky'okutiinatiinisa?

- Okwemereza omurimo gwa Muhammad aha kurwanirira obugabe bw'abantu bw'okugamba hataine orikukuteera aha mukono.

### Niki ekyakubaasize kuba kikozirwe omu muringo ogundi?

- Okutwara enshonga egi aha pooriisi ku baakuba nibagyendaho, pooriisi neebaasa kutandika okucondooza barikukozesa esimu ezibiire nizimuteererwa;

<sup>4</sup> 4 Front Line Defenders, 'Work book on security: Practical Steps for Human Rights Defenders at Risk' 2011,<https://www.frontlinedefenders.org/en/resource-publication/workbook - security-practical-steps-human-rights-defenders-risk>, Accessed 23 June 2016.



- Okurekyera aho okukozesa omuhanda gumwe;
- Okuta pooriisi nari omukuumi aha ofiisi za Mohammad.

Kigozi, ori omurwanirizi w'obugabe bw'abantu mukuru, akaba ari omu kwetebekanisiza okuza kugamba aha mbeera y'obugabe bw'abantu omu ihanga rye omu ruteerane rukururw'orukiiko rw'Amahanga Ageeteereine aha bugabe bw'abantu. Akatandika kuteererwa esimu kuruga aha muntu arikweyeta omunyamahurire arikwenda kumanya ebiteekateeko bya Kizito ahabi yaabaire naaza kugambaho omu rukiiko orwo. Bwanyima omushaija akeeyanjura nk'omukozi w'ekitongore ky'eb'y'okwerinda omu ihanga kandi akagambira Kigozi ku ekitongore ky'eb'y'okwerinda omu ihanga ku kyabaire nikimanya ehururu ei Kigozi na bagyenzi be baabaire barimu. Omu biro bikye by'okuteererwa kw'esimu egoy, Kigozi akatunga okutiinatiinisibwa kw'okwitwa kuruga aha muntu owaagizire ngu aine agarikukwata aha rugyendo rwe rw'okuza omu ruteerane rukuru rw'orukiiko rw'Amahanga Ageeteeraine aha bugabe bw'abantu

Okuza kuhika aha bwire bw'orugyendo rwe, omwe abahu arikukora nabo omu ofiisi akamuteerera esimu kugiraho orukiiko rw'ahonaaho n'omuntu omwe kuruga omuri kimwe aha bitongore ebirikubaha obuhwezi. Okuhika aha ofiisi, Kigozi akabuganwa n'abantu barikuruga omu kitongore ky'eb'y'okwerinda omu ihanga abaamukuriire bakamutaasya omu motoka y'ebirahuri bitarikureeberwamu bamuteire aha munwa gw'embundu barikumuragiira obutagyenda. Okugyezaho kubabuza ngu nibo baahi kandi n'owaabaire aboohoreize kikamurugiramu okuteerwa barikukozesa ebibunu by'embundu zaabo enkye eza pisituro. Kigozi akagyemeserezibwa kuruga aha rugyendo kandi nabwanyima yaahindura n'omwanya ahu yaabaire naaraara.

#### **Ni bintu ki eby'okutiinatiinisa?**

- Okuteerera Kigozi amasimuga kiro kitwara omunaku gatarikworeka ahu garikuruga garikumutiinatiinisa kurekyera aho ehururu y'okurwanirira obugabe bw'abantu;
- Okutiinatiinisibwa kw'okwitwa kuruga aha muntu otarikumananya;
- Okutiinatiinisibwa kw'okwitwa n'okuteerwa kuruga ahab'eb'y'okwerinda abakurwire Kigozi kifuba kumuta omu motoka bamworekyereize eminwa y'embundu;
- Orugyendo orwaremesiibwe ab'eb'y'okwerinda.

#### **Ekiyendererwa ky'okutiinatiinisibwa?**

- Okuremesa ekiyendererwa ky'ehururu ya Kigozi aha mbeera y'obugabe bw'abantu omu ihanga rye.
- Niki ekyakubaasize kuba kikozirwe omu muringo ogundi??
- Okumanyisa pooriisi aha kuteererwa esimu namunonga obu kyabaire nikikwata aha by'okwerinda kw'eihanga;
- Kugyezaho kuronda abandi bantu omu hururu niyo emwe kugamba omu mwanya gwe;
- Kubanza yaagambaho na bagyenzi be atakahikire aha kwiruka arikuza kubugana abaamuteereire esimu ahonaaho;
- Okuhindura enamba z'esimu..

Om u miringo emwe y'okugyezaho kuzibira okuhikwaho akabi, omu bwire obwingi ekirikubaasa kurugwamu okwitwa, ni kikuru abarikurwanirira obugabe bw'abantu kureeba aha kutiinatiinisibwa oku n'obwegyendesereza babaase kugiraho okusharamu kurungi. Om u nshonga ibiri ezaayorekwa, ni kikuru kwebuuza ahabwaki abarwanirizi b'obugabe bw'abantu batungire okutiintiinisibwa oku. Eki nikija kutuhisia ahu okutiinatiinisibwa oku kurikuruga kandi n'oku twakubaasa kukumaraho.

# OKWETEGYEREZA OBUZIBU OBURIKUBAASA KUBAHO

## OKUSHOBOORORA AMAKURU G'OKUBA OMU KABI

Okuba omu kabi nikibaasa kushoboororwaho nk'ekintu ekirikubaasa kubaho kikagira eki kyashiisha. Okuba omu kabi nibubaasa kuba obuzibu obu abarwanirizi b'obugabe bw'abantu barikushanga omu mirimo yaabo ya buriizooba.

Abarikurwanirira obugabe bw'abantu nibashanga obuzibu ahabw'okuba emirimo yaabo neebaasa kurabanisamu ebigyendererwa by'abaine obushoboorozi. Eki nikibata omu kabi, ab'omumaka gaabo, ebitongore byabo hamwe n'abantu abu barikurwanirira boona nikibata omu kabi.

- Obuzibu oburikukira kubaho omu kicweka eki
- Okuringaho ebitongore by'okurwanirira obugabe bw'abantu;
- Kukwata n'okukinga za akaunti z'ebitongore bitari bya gavumenti n'ezza ba memba babyo;
- Okwita abanyamahurire n'abarwanirizi b'obugabe bw'abantu abarikukora aha nshonga z'amaani;
- Okubeehererwa;
- Okwibwaho ebihandiiko by'omugasho;
- Okusiisikarirwa ebantu n'ebi'obugaiga;
- Okukuzibira okutambura;
- Okuhambwa kifuba;
- Okubonabonesibwa/okugangibwa;
- Okugyemwa kuza omu buzaahe;
- Okukukwatwa, okusibwa omu buhenda biragiyo hamwe n'okukubuzaho;
- Okukoza za kooti na ofisi z'obwebembeezi kutiinatiinisa.

## OKWETEGYEREZA OBUZIBU OBURIKUBAASA KUBAHO

Okwetegyereza obuzibu oburikubaasa kubaho kurimu okushwijuma okutiinatiinisa okuriho, embeera eriho omu kubaasa kuhikibwaho akabi hamwe n'okubaasa n'ebantu ebiriho kubaasa kukozesibwa akabi obutabaho. Amatembezo ashatu aga agarikurabwamu kushwijuma obuzibu oburiho nigakorera hamwe kandi buri rimwe nirigaitira aha rindi nk'oku kirikworekwa omu ky'okureeberaho ahaifo.

AMATEMBEZO G'OKUSHWIJUMA	OKUSHOBORORA AMAKURU
1. Okwetegyereza akabi/obuzibu	Omu kwetegyereza oku, abarwanirizi b'obugabe bw'abantu nibareeba kandi beetegyereza ebirikworeka ku harikubaasa kubaho akabi. Reero eki nikibahwera kubaasa kumanya oku obuzibu obwine akakwate n'okutiinatiinisibwa okuriho burikubaasa kubaho n'eki burikubaasa kureetaho.
2. Okwetegyereza embeera eriho erikubaasa kureeta obuzibu bwabaho	Abarwanirizi b'obugabe bw'abantu nibareeba aha mbeera ezirikubaasa kwongyera akabi kubaho. Harimu okureeba aha bweremwa bw'abarwanirizi b'obugabe bw'abantu ku haakugira akabi akaabaho.
3. Okushwijuma okubaasa okuriho n'okurikwetaagisa	Abarwanirizi b'obugabe bw'abantu nibamanya ebantu ebiriho (okubaasa) kukora aha buremeezi oburikubaasa kubaho hamwe n'ebantu ebirikwetaagwa kwongyera ahaby'okwerinda kwabo.



## **OBUZIBU OBURIHO KUBAASA KUHIKIBWAHO AKABI**

Obuzibu oburiho kubaasa kuhikibwaho akabi nikibaasa kushoboororwa nka obweremwa bw'abarwanirizi b'obugabe bw'abantu oburikwongyera embeera y'okubaasa kuhikibwaho akabi nari okwongyerera kimwe oburemeezi obu akabi ako karikureeta: nk'oku ekimuri kirungi ky'erangi n'omweyangye gunuzire kirikuretera ekimuri ekyo kyataayaayirwa munonga obukooko. Ebintu ebi omurwanirizi w'obugabe bw'abantu ebi aine nari ebimwetoroire nari ebikorwa ebi arikukora nari ebi atarikukora nibyo birikubaasa kumuhiyaho akabi.



## **OBUSHOOOROZI NARI OKUBAASA**

Okukigyerageranisa n'eky'obuzibu oburiho kubaasa kuhikibwaho akabi, obushoborozi nari okubaasa n'ebantu, obushoborozi n'amaani ebirikubaasa kukozesibwa kukyendeza aha kabi kubaasa kubaho n'ebyo ebi karikubaasa kureeta: Omuringo nigwe gumwe twakozesa eky'okureeberaho ky'orushabago rw'okubiikamu shukaari rwine omufundikizo guhami okuzibira ebimunyu kugizamu. Hariho emiringo mingi y'okwongyera aha aha kweyongyera kw'obuzibu obu abarwanirizi b'obugabe bw'abantu barikukoreramu

### **Embeera y'eb'yobutegyeki**

Embeera y'eb'yobutegyeki ey'abarikukora omurimo gw'okurwanirira obugabe bw'abantu barikukoreramu n'ekwatagana munonga n'obuzibu obu barikurabamu. Eky'okureeberaho, omumahanga agamwe obwire bw'eb'yoburuuru nibuba bugumire omu burigwa-izooba n'amatemba ga burigwa-izooba bwa Africa, kandi nibuba buri obwire bugumire ahabw'abarwanirizi b'obugabe bw'abantu obu barikuba bari omu kabi kahango.

### **Tekinorogiya**

Omukyasha kya 21 enkozesza ya tekinorogija ebaasize kweyongyera, ekibasize kwongyera amaani omu nkora y'abarwanirizi b'obugabe bw'abantu. Empurizagana ahagati y'abarwanirizi b'obugabe bw'abantu, amahanga, za kontinenti ekeeyongyera kwonka okuheereza obutumwa okw'omurembe orikukoza kompyuta nakyo kikongyera obuzibu bwingi. Omukyasha harimu emihanda y'empurizana erikubaasa kukwatwamu, okureeba omu butumwa bwawe bwesherekye, okubutoza, okwibwa kw'obutumwa oburikwohoreziba n'okusharaho ebintu ebi orikukoza omu mpurizana y'okukoza intaneti. N'obu haakuba ahu bagyerizeho kutaho emiringo y'okukuma obutumwa, hoona habaasize kubaho emirundi ahu abantu abateikiriziibwe babaasize kuhenda nari kukozoza obumanyi kwiba ebihama omu kompyuta.

### **Enshonga Ezirikukwatwaho**

Omurimo gw'enshonga z'obugabe bw'abantu obumwe n'obumwe abari omu bwebembezi n'abamwe abatari mubwebembezi kwonka haine ebi barikukora nibagutwara nk'ogugyendereire kusiiga enziro n'okutaahataaha omu biriho nari ebirikugyenda omumaisho. Hariho enshonga nyinyi ezirikukwatwaho ezirugiremu abarwanirizi b'obugabe bw'abantu oburemeezi.

Enshonga ezimwe ezirikukwatwaho zirimu ebirikukwata aha obugabe bw'abantu abamwe abarikutwarwa nka; abakye, abakazi, obugabe bw'obuhangwa bw'omuntu, obugabe bw'eb'yobuteeka bw'abantu n'eb'yobutegyeki, obugabe ahabw'eb'yobugaiga bw'omu itaka ebirikutimbwa hamwe n'eb'yobuhangwa bw'ensi.

### **Omukyasha**

- Ekintu ekirikubaasa kubaho kikareeta akabi nari obuzibu;
- Okugamba akabi – Omuntu orikugamba akabi arikuruga aheeru;
- Embeera y'okushoberwa – Obweremwa oburi omunda;
- Okwebaasa okuriho – Ebikozesibwa ebiriho;
- Okuhikwaho akabi kiri ahagati y'omurimo gw'oburwanirizi bw'obugabe bw'abantu;
- Abarwanirizi b'obugabe bw'abantu boona nibahikwaho obuzibu buri omwe omu muringo gwe kandi burikutaana kurugiirira omuntu aha ndijo;
- Kyendeeza aha kutiinatiinisibwa n'embeera y'okushoberwa obwe orikwongyera aha mbeera y'okubaasa ahabw'okwenda kukyendeeza aha mbeera y'okubeera omu buzibu.



# OKUKORA PURAANI Y'EBY'OKWERINDA

## NIKIMANYISA KI OKUKORA PURAANI Y'EBY'OKWERINDA?

Puraani y'eby'okwerinda n'ekihandiiko ekirimu enkora y'okwerinda hamwe n'okurahuka kugira ekiwakora omu miringo y'okwerinda ekirikuretera eby'okwerinda n'okugira obusingye kw'omuntu n'eby'ekitongore byayeyongyera kuba gye. N'omuhanda gw'okuretaho obusingye n'eby'okwerinda ahabw'emirimo y'ekitongore, abakozi, hamwe n'abarikukira kugasirwa omu mirimo y'ekitongore.

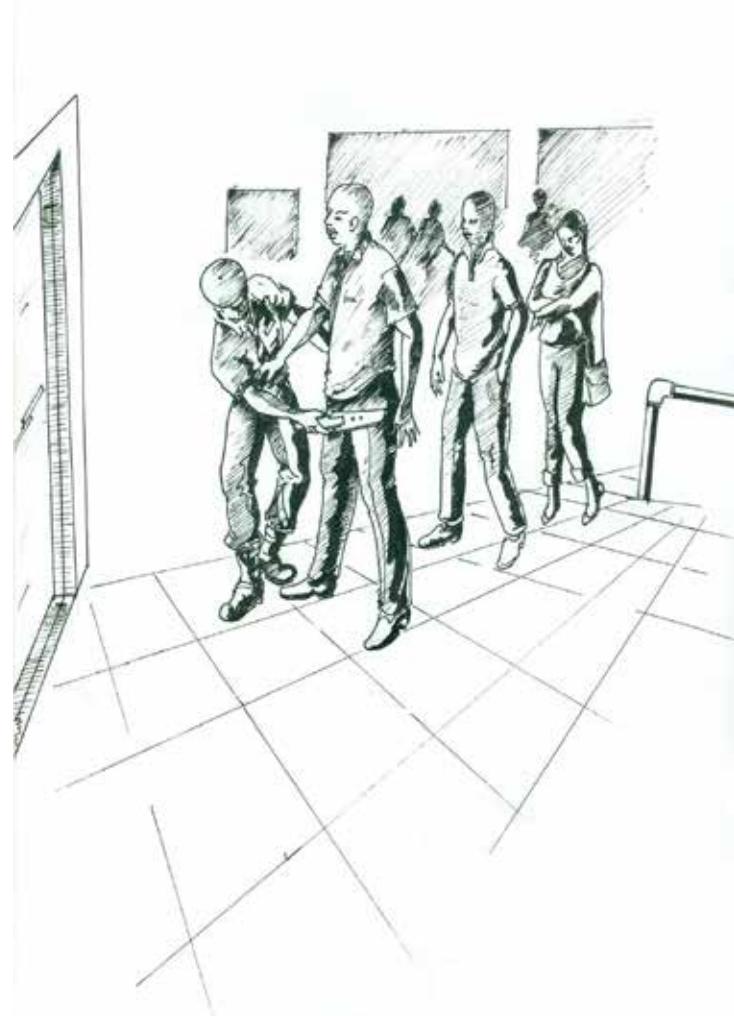
## EITEEKA RY'EBY'OKWERINDA NA PURAANI Y'EBY'OKWERINDA

Eiteeka ry'ebi'okwerinda n'ebiragiro, obuteeka n'obuhabuzi byona ebirikuteebwaho ekitongore kuhikiiriza eby'okwerinda bitebeekanisiibwe kurungi. Puraani y'ebi'okwerinda nayo neekwata aha kuta omunkora amateeka, obuteeka n'obuhabuzi okuhikiiriza embeera y'ebi'okwerinda omu bwire oburikuba buhairwe nari omurimo oguriyo nigukorwa ekitongore.

Eky'okureeberaho, ekitongore nikibaasa kutaho puraani y'ebi'okwerinda nk'omushomo gw'okutendekwa nari oruteerane kandi eteho ebiragiro nari amateeka goona gagyendereire kukora aha nshonga y'okutambura kw'abakozi.

## OKU ORIKUBAASA KUKORA N'OKUTA OMU NKORA PURAA NI Y'EBY'OKWERINDA

Okutaho puraani y'ebi'okwerinda, abakozi bashemereire kushutama bakaana amagezi aha buzibu oburikubaasa kuba aha kitongore. Ahaifo n'emihanda erikurabwamu kukora puraani y'ebi'okwerinda.<sup>5</sup>



<sup>5</sup> Protection International (PI), Guide for Facilitators, Page 96, [http://protectioninternational.org/wp-content/uploads/2014/04/PI-FACILI-TATORS-GUIDE\\_EN.pdf](http://protectioninternational.org/wp-content/uploads/2014/04/PI-FACILI-TATORS-GUIDE_EN.pdf), accessed 2 August 2020

## OKU ORIKUTAHO EMIHANDA Y'EBYOKWERINDA ERIKUKORA

Oteho emihanda kandi oteekateekye aha bikorwa ahansi ya buri gumwe. Okureeba ngu hariho okwikirizana ahagati ya boona abarikuzaana emyanya etari emwe n'emwe, hashemereire kubaho okuta omu nkora ebikorwa ebirkubaasa kureetera boona abarikukwatwaho okutwara kurungi n'okukunda omurimo ogu barikukora.

Ekirikurugamu okwikiriza oku nikwija kubakyendeeza aha rurengo oru barikuba babeereireho omu buzibu reero bwanyima kihamye eby'okwerinda by'omurimo gw'abarwanirizi b'obugabe bw'abantu.

Handiika ebizib  
by'okutinatiinisibwa  
ebirkubuganwa  
abarwanirizi  
b'obugabe  
bw'abantu

Manya oburemeezi/  
okubaasa ebyaine  
akakwate na buri  
kizibu

Manya okubaasa  
okurikwetaagisa  
okuzibira obuzibu  
okubaho

Heereza  
obujunaanizibwa  
n'obwire obu  
buri kintu  
kiraakorerwemu

## Eby'okuteekateekaho

- Puraani y'ebi'okwerinda eshemereire kuba ngufu, erimu byona kandi erikuba eriho kukozesibwa nk'ekihandiiko ky'okujurizamu, kyanguhi kukozesibwa kandi kiine amakuru agari masya;
- Eshemereire kukora aha buzibu oburikutwarwa kuba obw'amaani erikuranza munonga aha buzibu obwetegyereziibwe kurungi;
- Ahabwa buri buremeezi oburiho eky'okukora nikija kuteebwaho kuhikiiriza amaani agarikwetaagisa reero kikazibira akabi kubaho.

ENKORA	EMIHANDA ERIKUBAASIKA
Okwikiriza	Okushomesa aha murimo gw'omurwanirizi w'obugabe bw'abantu arikukora; Okumanyisa aha murimo ogukoziwe; Okujwanzya abantu omu murimo ogukoziwe; Okwongyera kumanisa, n'ebindi.
Okukingira	Okwombeka orugo rw'ekisiika; Irembo rihami; Abakuumi; Enkufuru zigumire; Ebyoma by'okukingira abashuma/abiibi; Amataara g'okwakira aheeru; za kamera n'ebindi.
Kufuruka	Okukoragana n'abandi abarwanirizi b'obugabe bw'abantu aha rurengo rw'ahansi abarikwakiirwa munonga kandi abaine obukuumi omu bantu. Okukoragana n'ebitongore ebiine amaani; Okukorera hamwe omu kweteerana kutari kukora nk'omuntu wenka; Okukorera ahansi y'ebindi ebitongore; okugura yinsuwarensi, n'ebindi.

Aha rubaju orundi, omuhanda gw'okukingira gurimu okutaho ebgingi by'okuzibira abantu abataikiriziibwe okutaaha omu mwanya gw'omurinzi w'obugabe bw'abantu.

Enkora y'okufuruka neegira ngu omurwanirizi

w'obugabe bw'abantu kugira okwerinda kurikumara, ashemereire kuhayo obuzibu obu batarikubaasa kugumira omu bitongore ebindi ebiine obushoboorozi kukora aha bizibu ebyo. N'omuhanda gw'okweshereka enyima y'ebitongore ebiine okubaasa.<sup>6</sup>

<sup>6</sup> VanBrabant2000,p.57



# OMUJWEKYERWA W'OMUTAANO AHABW'EKIBIINA KY'AMAHANGA AGEETEERAINE AHABW'ABARWANIRIZI B'OBUGABE BW'ABANTU

## EMIHANDA ERIHO AHABW'OKURINDA ABARWANIRIZI B'OBUGABE BW'ABANTU

Omu mwaka 2000, akakiiko k'ekitongore ky'ensi yoona aha bugabe bw'abantu kakataho ekiragiro ky'entumwa y'omutaano aha mbeera y'abarwanirizi b'obugabe bw'abantu ahabw'okwenda kushagika okuta omu nkora ekihandiiko ky'abarwanirizi b'obugabe bw'abantu ekiikiriziinweho kikateebwaho omukono 1998.<sup>7</sup> Hati oine obushoboorozi ahabw'ekiragiro eki n'omw. MichelForst.<sup>8</sup>

Ekiragiro eki nikishoboorora ku emirimo mikuru y'entumwa y'omutaano eri egi:

- Okuronda, okwakiira, okwetegyereza n'okugarukamu amakuru agarikukwata aha mbeera y'abarwanirizi b'obugabe bw'abantu;
- Okutaho enkoragana n'enteesagana na zaagavumenti n'abandi abarikukwatwaho ahaby'okutunguura n'okuta omu nkora ekiragiro eki;
- Okuhabura aha mihana ehikire omu kurinda kurungi abarwanirizi b'obugabe bw'abantu hamwe n'okukuratira ebikozirwe aha kuhabura oku;
- Okuguma naateekateeka aha buhangwa bw'abantu oba abashaija nari abakazi omu mirimo ye yoona.

Emihanda mingi erikukozeesiba aha rurengo rw'ebanya eteirweho ahabw'okuteebwaho entumwa y'omutaano y'Amahanga Ageeteeraine ahabw'abarwanirizi b'obugabe bw'abantu n'ekigyendererwa ky'okwongyera okurinda abarwanirizi b'obugabe bw'abantu, ahaifo n'emihanda mikuru erikukozeesibwa omu byanga:



Entumwa y'omutaano ahabw'abarwanirizi b'obugabe bw'abantu ahabw'akakiiko ka Africa ahabw'obugabe bw'obuntu hamwe n'obugabe bw'abantu

- Kuruga bumosho kuza buryo ni: Pierre Claver Mbonimpa (Purezidenti wa l'Association pour la Protection des Droits Humains et des Personnes détenues), Hassan Shire (Orikukurira k'ekitongore kya DefendDefenders), na Michael Forst (Entumwa y'omutaano aha mbeera y'abarwanirizi b'obugabe bw'abantu) omu kigaaniiro ky'omurundi gwa 31 Session ky'orukiiko rukuru rw'ekigombe ky'Amahanga Ageeteeraine aha bugabe bw'abantu. (2005)<sup>9</sup>;
- Entumwa y'omutaano ahabw'abarwanirizi b'obugabe bw'abantu ahabw'akakiiko k'obugabe bw'abantu ahabw'amahanga agarikukora America<sup>10</sup>;
- Amateeka g'ekibiina ky'okweteerana kw'amahanga ga Europe agarikukuratirwa ahabw'abarwanirizi b'obugabe bw'abantu ekyateirweho ba minister b'enshonga z'aheeru b'amahanga ga Europe omu mwaka 2004<sup>11</sup>.

7 HCHR,'resolution2000/61establishingthemandate' <http://ohchr.org/EN/Issues/SRHRDefenders/Pages/Mandate.aspx>, accessed1August2016.

8 OHCHR,'Resolution25/18.MandateoftheSpecial Rapporteuronthesituationofhumanrightsdefenders'<https://documents-dds-ny.un.org/doc/UNDOC/GEN/G14/134/52/PDF/G1413452.pdf?OpenElement>,accessed1August

9 TheAfricanCommissiononHumanandPeoples'Rights,'69: ResolutionontheProtectionofHumanRightsDefendersinAfrica'4June2004,<http://www.achpr.org/sessions/35th/resolutions/69/>accessed1August2016.

10 Inter-American CommissiononHumanRights,AG/RES.1842 (XXXII-O/02),'HumanRightsDefenders:SupportforIndividuals,Groups, andOrganizations ofCivilSocietyWorkingtoPromoteandProtectHumanRightsintheAmericas'[http://www.oas.org/juridico/english/ga02/agres\\_1842.htm](http://www.oas.org/juridico/english/ga02/agres_1842.htm),accessed1August,2016.

11 EUR-Lex,AccessstoEuropeanUnionLaw,'EUguidelineson humanrightsdefenders'8December2008,<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=URISERV%3AI33601>,accessed1August2016.

Ekiragiro ky'Amahanga Ageeteeraine nikoragana n'enkora y'emihanda erikozesibwa aha rurengo rw'ebanya kureeba ngu haabaho eby'okwerinda birikumanya ahaw'b'arikurwanirira obugabe bw'abantu.

Okukoragana oku kurimu okukwatanisa aha bumanyi n'okubagana amakuru, okuhaburana aha mianda y'okukoreramu emrimo n'okumanya ebigyendererwa bikuru.

Aha rurengo rw'ehanga, amahanga maingi omu nsi yoona agakuratira enkora y'ekitongore ky'Amahanga Ageeteeraine n'ebanya hamwe kandi gataho n'emihanda eyaago aha rurengo rw'ehanga erikuhwera kurinda abarwanirizi b'obugabe bw'abantu. Omuri egi harimu engyenderwaho, hamwe n'okukora amateeka, enkora ya kooti hamwe n'ebitongore bw'okurwanirira obugabe bw'abantu.

**ENTUMWA Y'OMUTAANO AHABW'ABARWANIRIZI  
B'OBUGABE BW'ABANTU EY'ORUKIICO RUKURU  
AHABW'AMAHANGA GA AFRICA AHA BUGABE  
BW'OBUNTU N'OBW'ABANTU**

Omukwezi kwa mukaaga 2004, Orukiiko rukuru rw'amahanga ga Africa aha bugabe bw'obuntu n'obw'abantu rukataho ekiragiro ky'omwanya gw'entumwa y'omutaano ahaw'b'arwanirizi b'obugabe bw'abantu omu Africa.<sup>12</sup>

Omwanya ogwo hati ogurimu ni Reine Alapini-Gansou, ori puriida kuruga omu ihanga rya<sup>13</sup> Benin.13 Omwanya ogu nigugamba ku entumwa y'omutaano ehikire kukora ebi:

- Okumanya, okwakiira, okushwijuma n'okukora aha makuru agarikukwata aha mbeera y'abarwanirizi b'obugabe bw'abantu omu Africa;
- Okuhayo ripoota ahari buri ruteerane rw'orukiiko rukuru rwa Africa;
- Okukwatanisa n'okwetaba omu ntensagana n'amahanga agari ga memba, ebitongore ebirikurwanirira obugabe bw'abantu aha rurengo rw'ehanga, ebitongore ebirikukwathaho ebiri ahagati ya zaagavumenti, enkora ezirikozesibwa aha rurengo rw'ensi yoona n'aha rurengo rw'ekyanga aha kurinda abarwanirizi b'obugabe bw'abantu n'abandi abu kirikukwathaho;
- Okutaho n'okuhabura aha mianda erikubaasa kukora kurungi omu kurinda abarwanirizi b'obugabe bw'abantu hamwe n'okukratira aha kuhabura kwe;
- Okwegyesa n'okutwara omumaisho omurimo gw'okuta omu nkora endagaano y'ekitongore ky'Amahanga Ageeteeraine ahaw'b'arwanirizi b'obugabe bw'abantu omuri Africa.

Kuruga obu haatandikwaho ekiragiro eki, entumwa z'omutaano zibaasize kuguma nizikwataganan n'abarwanirizi b'obugabe bw'abantu barikurabira omu kwetaba omu nteerane z'ebanya, okutaayaayira omu mahanga, harimu okugira entaayaayo za hamwe n'ebihandiiko by'amahurire hamwe n'entumwa y'omutaano ahaw'b'ekitongore ky'Amahanga Ageeteeraine aha mbeera y'abarwanirizi b'obugabe bw'abantu.<sup>14</sup>

Entumwa y'omutaano hoona ebaasize kuhabura abantu buntu n'ebitongore bitari bya gavumenti kuhayo emanja ezirikukwata aha barwanirizi b'obugabe bw'abantu ow'entumwa y'omutaano ahaw'b'abarwanirizi b'obugabe bw'abantu ahaw'b'akakiiko ka Africa ahaw'b'obugabe bw'obuntu hamwe n'obugabe bw'abantu. Omu ndagaano aha bugabe bw'obuntu n'obugabe bw'abantu ahawwa Africa, entumwa y'omutaano ahaw'b'abarwanirizi b'obugabe bw'abantu ahaw'b'akakiiko ka Africa ahaw'b'obugabe bw'obuntu hamwe n'obugabe bw'abantu naaheebwa obushoborozi kwakiira n'okukora aha makuru agarikuruga omu bantu buntu n'ebitongore.<sup>15</sup>

**EMIRINGO Y'OKURINDA ABARWANIRIZI B'OBUGABE  
BW'ABANTU AHA RURENGO RW'EHANGA**

Ekirangiriro aha barwanirizi b'obugabe bw'abantu nikihamya ku obujunaanizibwa n'omurimo mukuru aha kutunguura n'okurinda obugabe bw'abantu hamwe n'obusingye bw'obuhangwa n'ogw'ehanga, n'ahabwekyo amahanga nigeetaagisibwa kureeba ngu abarwanirizi b'obugabe bw'abantu baine obusingye n'eb'y'okwerinda bihami garikuta omu nkora ekirangiriro aha barwanirizi b'obugabe bw'abantu.

Omukwezi kwa mukaaga 2016, eihanga rya Ivory Coast naryo rikataho "Eiteeka aha kutunguura n'okurinda abarwanirizi b'obugabe bw'abantu". Gukaba omurundi gw'okubanza eihanga rya Africa okukora eiteeka n'ekigyendererwa ky'okurinda abarwanirizi b'obugabe bw'abantu.<sup>16</sup>

Ahaifo n'eb'y'okureeberaho aha mianda y'okurinda abarwanirizi b'obugabe bw'abantu aha rurengo rw'ehanga:

- **Emihanda y'eb'y'obwebembezi:** Ebitongore ebirikurwanirira obugabe bw'abantu aha rurengo rw'ehanga, ebitongore by'eb'y'amateeka nka kooti, ebitongore ebirikukwatisa amateeka, poriisi, eby'okwerinda aha rurengo rw'ehanga, ebitongore ebirikukora amateeka, hamwe na gavumenti z'ebanya.
- **Amateeka:** Engyenderwaho hamwe n'ebindi biragiro nka "Eiteeka aha kutunguura n'okurinda abarwanirizi b'obugabe bw'abantu" omu ihanga rya Ivory Coast.

12 The African Commission on Human and Peoples' Rights, '69: Resolution on the Protection of Human Rights Defenders in Africa' 4 June 2004, <http://www.achpr.org/sessions/35th/resolutions/69/> accessed 1 August 2016.

13 The African Commission on Human and Peoples' Rights, '69: Resolution on the Protection of Human Rights Defenders in Africa' 4 June 2004, <http://www.achpr.org/sessions/35th/resolutions/69/> accessed 1 August 2016

14 DefendDefenders, 'Defending Human Rights, A Resource Book for Human Rights Defenders, East and Horn of Africa Human Rights Defenders Project, 2nd edition, page 8

15 Article 55 of the African Charter on Human and Peoples' Rights

16 Download the Côte d'Ivoire Law on human rights defenders here (French only), [http://www.ishr.ch/sites/default/files/documents/jo\\_loi\\_defenseurs.pdf](http://www.ishr.ch/sites/default/files/documents/jo_loi_defenseurs.pdf)



# EBIRIKWONGYERWAHO

## Ekirangiriro ky'ekitongore ky'Amahanga Ageeteeraine aha barwanirizi b'obugabe bw'abantu omu bugufu

Okushoborora aha kirangiriro aha barwanirizi b'obugabe bw'abantu kukatandika omu mwaka<sup>17</sup><sup>17</sup>

1984 kwahendera n'okuhingaza ekihandiiko omu ruteerane rwa boona orwa 1998, aha mukoro gw'okujaguza emyaka 50 y'okurangirira ekihandiiko ekihango aha bugabe bw'abatu. Amaani g'okukwatira hamwe kwa bimwe aha bitongore by'obugabe bw'abantu ebitari bya gavumenti hamwe n'abajwekyerwa b'amahanga kikayamba kureeba ngu aha muheru ekyarugiremu kikaba eky'amaani, eky'omugasho kandi ekihandiiko ekirikubaasa kukozenisibwa. Eky'amaani munonga, ekirangiriro tikirikukwata aha mahanga gonka nari abarwanirizi b'obugabe bw'abantu kureka buri omwe weena. Nikitugambira ku twena twine omwanya gw'okuzaana nk'abarwanirizi b'obugabe bw'abantu kandi kihamisiriza ku hariho ehururu y'obugabe bw'abantu omunsi yoona erikutukwataho twena.

### Akakwate k'ebi'amateeka

Ekirangiriro kyo kyonka tikihandiiko kirikukwasa amateeka. Kwonka kiine enkuratana y'amateeka hamwe n'obugabe obwegamiire omutindo gw'obugabe bw'abantu oburi omu bindi bihandiiko by'amateeka aha rurengo rw'ensi yoona ebirikukozesibwa okukwatisa amateeka - nka endagaano y'ensi yoona aha bugabe bw'obuteeka n'obugabebw'ebi'obutegyeki. Namunongaekirangiriro kikahinguzibwa omu kwikirizana kw'oruteerane rwa boona, n'ahabwekyo nimanyisa okwehayo kuhami kw'amahanga aha kukita omu nkora. Amahanga nigeeyonygyera kuhinguza ekirangiriro eki nk'ekiragiro kirikukwatisa amateeka aha rurengo rw'eihanga.

### 2. Ekirangiriro oku kirikugamba

Ekirangiriro nikigamba aha bushagiki n'okurinda abarwanirizi b'obugabe bw'abantu omu mbeera y'omurimo gwabo. Tikirikureetaho obugabe obusya kureka nikishoboororera aha bugabe oburiho kandi

omuringo nigwe gumwe nikyangusya okubukozesa ahabw'omurimo gwabwe gwenyini n'ahabw'embeera y'abarwanirizib'obugabebw'abantu. Eky'okureeberaho nikita amaani aha kureeba ngu ebitongore by'obugabe bw'antu byatunga obuhwezi bwa sente hamwe n'okwerundaana hamwe n'okukozena kumwe amakuru agarikutungwa aha mutindo gw'obugaabe bw'abantu hamwe n'oku burikuteganisibwa.

Ekirangiriro nikigamba aha bintu ebi amahanga gahikire kukora n'obujunaanizibwa bwa buri omwe aha kikwatiraine n'okurwanirira obugabe bw'abantu, okwongyera okushoboorora aha kakwate aku kiine n'ebiragiro by'eihanga. Ebicweka bingi by'ekirangiriro eki nibicuubwa bugufu omu bicweka ebirikworekwa ahaifo.<sup>18</sup> Ni kikuru kukihamya ku abarwanirizi b'obugabe bw'abantu ahansi y'ekirangiriro eki baine obujunaanizibwa kukora emirimo y'obusingye.

#### (a) Obugabe n'okurindwa ebirikuheebwa abarwanirizi b'obugabe bw'abantu

Ebicweka ebi 1, 5, 6, 7, 8, 9, 11, 12 na 13 eby'ekirangiriro nibigamba aha kurindwa okurikuheebwa abarwanirizi b'obugabe bw'abantu, harimu n'obugabe bwabo:

- Okushaba kuheebwa obukuumi n'okutunga obugabe bwabo bw'obuntu aha rurengo rw'eihanga n'ensi yoona;
- Okukora omurimo gw'okurinda obugabe bw'abantu nk'omuntu buntu nari okwatananiise n'abandi;
- Okukora ebiligombe by'abeeteeraine n'ebitongore bitari bya gavumenti;
- Okukora enkiiko nari enteerane omu busingye;
- Okuronda, okutunga, okwakiira n'okubiika amakuru agarikukwata aha bugabe bw'abantu;
- Okureetaho n'okugaaniira aha biteekateeko n'amateeka ebisia aha bugabe bw'abantu hamwe n'okukora ekirikubaasika kureeba ngu byakirizibwa;
- Okuhayo ebirikushasha n'okugambwa abantu n'ebiteekateeko omu bitongore bya gavumenti

17 OHCHR, Declaration on Human Rights Defenders, <http://www.ohchr.org/EN/Issues/SRHRDefenders/Pages/Declaration.aspx> accessed 3 August 2016.

18 Ekihandiiko kirikushoborora aha kirangiriro omu bwijwire kikahebwayo omuhandiiki mukuru ahabw'akakiiko k'obugabe bw'abantu aha ruteerane rwako rw'omurundi gwa 56 omu mwaka 2000 (E/CN.4/2000/95). Ripoota hoona erimu ebiteekateeko aha kuta omu nkora ekirangiriro eki. Okwongyera ahari ekyo, Omukwezi kwa mushanju 2011, Margaret Sekagya akahayo ekihandiiko aha kirangiriro aha barwanirizi b'obugabe bw'abantu, ekihandiiko kikuru kirikworeka obugabe oburi-kugambwaho omu kirangiriro okukira munonga kirikurugiira aha makuru agarikutungwa naza ripoota ezikozirwe ahabw'omurimo ogu.

- ebirikukwatwaho kubaasa kutereesa omu mikorere yaabyo n'okubamanyisa ekintu kyona ekirikukwata aha murimo gwabo ekyakubaasa kuteganisa okubaho kw'obugabe bw'abantu;
- Okuhayo okwetomboita aha mateeka n'ebiragiro ebirikukwata aha bugabe bw'abantu kandi n'okureeba ngu okwetomboita okwo kwashwijumwa;
- Okuha obuyambi bw'ekikugu omu by'amateeka nari obundi buhabuzi n'obuhwezi omu kurwanirira obugabe bw'abantu;
- Okuza omu myanya erikuhuririrwamu emanja n'okuhozes abarikwetomboitwaho ahabw'okwenda kureeba yaaba buri aha mutindo gw'amateeka g'eihanga nari obujunaanizibwa bw'obugabe bw'abantu aha rurengo rw'ensi yoona;
- Okuhika n'okuhurizana n'ebitongore bitari bya gavumenti n'ebyo ebiine akakwate na za gavumenti nydingi hatariho okuteganisibwa;
- Okugasirwa omu kurihirirwa okwaine amakuru
- Okukorera omu mateeka g'omurimo n'obukugu bw'abarwanirizi b'obugabe bw'abantu;
- Okukuumwa kurungi ahansi y'ebiragiro by'eihanga omu kurwanisa nari okuhakanisa omu kurabira omu mihanda y'obusingye, ebikorwa nari ebiremirwe kukorwa byona birikubarirwa eihanga omu kureetaho okuribatiirirwa kw'obugabe bw'abantu;
- Okuronda, okwakiira n'okukozesa ebintu ahabw'omurimo gw'okurinda obugabe bw'abantu (harimu n'okutunga esente kuruga aheeru y'eihanga).

### **b) Emirimo ya za Gavumenti**

Za gavumenti zaine obujunaanizibwa okuta omu nkora n'okuta ekitinisa ebicweka by'ekirangiriro byona. Ebicweka 2, 9, 12, 14, na 15 nibjuriza aha mirimo ya za gavumenti kandi nibyoreka ku buri ihanga riine obujunaanizibwa n'omurimo ogu rigushemereire kukora:

- Okurinda, okutunguura n'okuta omu nkora obugabe bw'abantu bwona;
- . Okureeba ngu abantu boona abari ahansi yaaryo baabaasa kushemerererwa omu bugabe bw'abantu obw'obuhangwa, omu by'entasya, eby'obutegyeki hamwe n'obundi bugabe n'obusingye;
- Okukozesa emihanda y'amateeka, obwebembezi

n'endijo mianda nk'oku kirikwetaagisa kureeba ngu haabaho okuta omu nkora obugabe bw'abantu n'obusingye bwabo;

- Okutaho oburyo bw'okurihirira abantu abarikugambwa kuba bahikirweho okuteganisibwa omu bugabe bw'obuntu;
- Okukora okucondooza kw'ahonaaho okutarikugwera rubaju aharikugambwa kuba habaireho okuteganisa obugabe bw'abantu;
- Okukozesa emihanda yoona erikwetaagisa okureeba ngu haabaho okurinda buri omwe kureeba ngu tiyahikwaho okugangibwa, okutiinatiinisibwa, okuhorra enzigu, okujonjorwa, okuteebwa aha munigo nari ebindi bikorwa by'obuhanda birikurugiirira aha muntu ogwe kukozesa obugabe bwe nk'oku burikugambwaho omu kirangiriro ky'obugabe bw'abantu;
- Okwongyera kuhwera abantu kwetegyereza obugabe bw'okugira obuteeka, bw'eb'yobutegyeki, bw'entasya n'obuhangwa;
- Okureeba ngu habaho n'okushagika okutandikaho n'okutaho ebitongore by'eihanga ebyetongoire ahabw'okutunguura n'okurinda obugabe bw'abantu, nka ekitongore kya kariishoriisho wa gavumenti n'Akakiiko k'Obugabe bw'Abantu;
- Okutunguura n'okuhagira okushomesa obugabe bw'abantu aha ndengo zonna z'obwegyese n'ez'okutendekwa kw'abakugu.

### **(c) Obujunaanizibwa bwa buri omwe**

Ekirangiriro nikhamisiriza ku buri omwe aine eibanjary'okugira eki yaakora omu mwanya ogu arikutuuramu kandi nikituhiwa twena kuba abarwanirizi b'obugabe bw'abantu. EKICWEKA kya 11 nakyo nikikora okujuriza aha bujunaanizibwa bw'abantu abarikukora emirimo y'obumanyi erikubaasa kugira eki yaakora aha bugabe bw'abantu abandi, kandi eki namunonga nikikwata abapooriisi, ba puriida, abaramuzi n'abandi.

### **(d) Omurimo gw'ekiragiro ky'eihanga**

EKICWEKA kya 3 n'ekya 4 nikigamba aha kakwate k'ekirangiriro n'ebiragiro by'eihanga n'ensi yoona n'ekigyendererwa ky'okureeba ngu haabaho omutindo gw'ekika ky'ahaiguru omu kuta omu nkora obugabe bw'abantu.



# EKITABO II

## EBY'OKWERINDA OMU KUKOZESA INTANETI



Ekicweka ky'akatabo aha by'okwerinda omu kukikozesa intaneti kirimu ebintu ebihindwirwe kukozesibwa omu byangabirikwiha omunkoray'okureebuuza ahabw'eby'okwerinda kwawe (Surveillance Self Defence) ey'ekitongore kya Electronic Frontier Foundation kandi erikukozesizibwa ahansi ya rayisinsi'y'ekitongore eki.

Rayisinsi egi neeheebwa ahansi ya CC-BY-3.0 copyleft agreement: Noikirizibwa kukoramu kopi kandi n'okugaruka okazijanjaaza omu muringo gwona nari enkora yoona nangwa n'okubijwanzya, kubihindura, n'okwongyera ahabw'omurimo gwona, ekikuru n'okureeba ngu omurimo ogwo waagweterera bakama bagwo ababandize.

# EKITABO II

## Ebirimu:

**Entandikiriro: Akatabo karikworekyerera aha by'okwerinda omu kukozesa Intaneti** 30

- Okwetegyereza akabi nari obuzibu
- Ebigyendererwa bitaano by'ebi'okwerinda
- Eby'okwerinda bikuru ahabw'ebiyoma ebi turikukozesa
- Eby'okwerinda ahabw'ebibiikire aha kompyuta, za flash disk n'ebindi bintu ebirukukozesibwa ahari kompyuta n'amasi mu g'omungaro
- Eby'okwerinda by'obutumwa nari data oburikutambuzibwa kurabira omuri za netiwaaka
- Eby'okwerinda bya za akaunti
- Eby'okwerinda by'ebiyoma ebirukukorera aha kompyuta ebi turikutambura nabyo
- Oku orikukozesa akatabo aka

**Okwetegyereza Akabi nari Obuzibu** 32

**Eby'okwerinda omu kukozesa Intaneti omu bicweka bitaano**

**Eby'okwerinda bikuru ahabw'ebiyoma ebi turikukozeseza omungaro** 34

- Ninyerinda nta ekikooko kirikuteganisa kompyuta ekirikumanya nka malware?
- Puroguraamu y'okuzibira ekikooko (Virus) kutaaha omu kompyuta
- Ebi orikumanyiraho ngu kompyuta eine obuzibu
- Okuguma noomanya ekiriho
- Enkozesya ya zaapuroguraamu etaine buzibu

**Eby'okwerinda ahabw'ebibiikire (data) aha byoma ebirukukorera aha kompyuta** 40

- Okubiika ebihandiiko nari data yaawe kurungi omu kihama
- Puroguraamu y'okubiika ebihandiiko nari data yaawe omu kihama n'endagiiriro zaayo

Okuguma noobiika kopi y'ebihandiiko nari data yaawe

**Eby'okwerinda by'obutumwa nari data oburikutambuzibwa kurabira omuri za netiwaaka** 44

- Oku intaneti erikukora
- Okuhurizana n'abandi
- Enkora y'okukuumma ebihama ahagati y'abari omu mpurizagana erikukora
- Okuteera esimu
- Okusindika obutumwa hamwe n'okusindika obutumwa ahonaaho
- Okukozesa email
- Eby'okwerinda by'omutindo omu kukozesa email
- Eki enkora y'okurinda ebihama ahagati y'abari omu mpurizagana etarikukora
- Oku orikukozesa ebintu ebitiikiriziibwe aha intaneti
- Obukodyo oburukukozesibwa
- Puroguraamu ezirikukuhwera kukozesa ebintu ebitiikiriziibwe aha intaneti
- Enkora ya intaneti erikuhindura amaziina omu kukuratana kwago zikaba eshuura
- Tekinorogye erikuhwera za kompyuta eziri omu myanya etarikushushana kukorera hamwe
- Puroguraamu ya busha erikuhwera empurizana aha intaneti otamanyirwe



### **Eby'okwerinda bya za Akaunti**

**53**

- Taho ebigambo bigumire by'ekihama bitarikurahuka kumanywa
- Toorana ebigambo by'ekihama bigumire kumanywa abandi
- Enkora y'okutaasyamu ebigambo byawe by'ekihama (password) emirundi mingi otakaikiriziibwe kukozesa kompyuta hamwe n'okuguma noohindahindura ebigambo by'ekihama ebyo (passwords)
- Okutiinatiinisa okukora kubi abarikwenda kwiba ebihama byawe nari kubakoma

### **Eby'okwerinda by'ebyoma bya Mobayiro**

**56**

- Ekizibu ky'amasimu g'omungaro
- Enkora y'okukozesa aooma okutooga omwanya ogu orimu
- Okukozesa omurongooti gw'esimu kumanya omwanya ogu orimu
- Okuhayo amakuru g'omwanya gworimu n'ebirikukukwataho ahabwa puroguraamu ezi orikutaayaayira nari kukozesa aha intaneti
- Okwihamo amasimu
- Okukorera omurimo gw'okutata aha simu
- Okuta ekikooko (virus) kya malware omu simu
- Esimu z'omungaro ez'omurembe: Puroguraamu n'enkora ahabw'eby'okwerinda omu byoma ebirukozesibwa omu mpurizana
- Ebikuru omu by'okwerinda omubyoma bya mobayiro ebirukozesibwa omu mpurizana
- Kozesa enkora y'okusiba ekirahuri ky'ekyoma kyawé
- Esimu yaawe guma noogitamu puroguraamu ensya
- Esimu yaawe otagitamu puroguraamu ezirikuruga omu butare obutarikwikirizibwa nari obutarikumanywa  
Esimu yaawe giihemu puroguraamu ya Bluetooth discovery mode
- Eby'okwerinda by'ebibiikirwe (data) aha simu yaawe
- Eby'okwerinda kw'ebirukozesibwa (data) kurabira aha intaneti  
Eby'okwerinda bya za akaunti
- Eby'okwerinda omubi oorikukora

### **Ebikozesibwa**

**63**

# ENTANDIKIRIRO

## Akatabo karikworekyerera aha by'okwerinda omu kukozesa intaneti

Ori omurwanirizi w'obugabe bw'abantu omu kyasha 21 omu Africa. Oine amagezi gaawe, noikiririza omu buringaaniza, nookwatagana kurungi n'abantu ba burijo, esimu y'omungaro, oine iPad, na laptop. Emyaka makumi abiri enyima obaasa kuba waabaire oine ebintu bishatu ebirkubanza kwonka esimu omunshaho yaawe na laptop omunshaho empango n'eb'yomutaano omu kyasha kya 21.

Tekinorogye y'okukozesa intaneti nkyongyera kugumya okubaasa kwitu kwetegyereza akabi akaturiho nk'abantu n'emirimo ei turikukora ahaw'okuba obwire obwingi tibirkubaasa kumanywa. Hataraho oine omumanyi kandi oine amagezi g'obumanyi kigumire kumanya ahu ebyoma ebi turikukozesa biraareebeze obwesigwa obu turikubutamu kubiikamu fairo zaitu z'omugasho n'okurabyamu obutumwa bwaitu bw'ekihama.

Africa neekira kugambwa kuba erugire omu tekinorogye enkuru ey'amasi mu ag'aha meeza ahaw'okujanjaara munonga kw'amasi mu g'omungaro okukiza ahandi hoona omunsi yoona. Orubaju orundi, tekinorogye omunsi yoona, eby'amateeka n'eniyikiriza y'obugabe bw'abantu eine akakwate n'eb'yomubonano hamwe n'eb'yokwerinda byaine kihango eki bikozire aha mbeera y'abarwanirizi b'obugabe bw'abantu omu Africa n'entuura y'abantu okutwarira hamwe hatabaireho emigisha erikwingana kukwata aha birikubaho ebyo.

Orutaro rw'ensi yoona omu kurwanisa ebikorwa by'obuheekyera rweyongyeire omu bwire nibwe bumwe kandi buri hamwe hoona hariho okwetyongyera kw'okukozesa tekinorogye y'empurizana ya buri mutu omu kihama nka email, Skype, Facebook messenger na WhatsApp, kandi eki kyareetaho okwebuuza ekihikire nikiiha ahagati y'omuntu kugira obugabe bw'okubiika ebihama bye nk'omuntu n'eb'yokwerinda kw'abantu boona. Obwire nibwe bumwe, ebitongore by'eb'yokwerinda by'abantu buntu birikukora puroguraamu n'ebyma bya kompyuta by'okwiba kifuba nari bwesherekye ebihama bakabiguza za gavumenti omunsi yoona, ekirikumanyisa ngu enkora z'omurembe z'okureebuuza enkozesza ya intaneti byainwe ebitongore by'eb'yokwerinda

ebirkubitungira aha kicweka ky'ebeyi y'endijo mianda erikukozesibwa omu mahanga. Akatabo aka katebeekanisiibwe kuheereza omusingye guhami omu magyezi ga tekinorogye okubaasa kwetegyereza gye obuzibu obu oine omu kukozesa intaneti ahaw'okuba nikiteganisa omurimo gwawe gw'okurwanirira obugabe bw'abantu, n'okugira ebyakorwa kumaraho obuzibu obwo. Omu kataho aka koona, nitwija kujuriza ebyabaireho n'embooz z'abarwanirizi b'obugabe bw'abantu omu Africa nk'oku barikubugana ebizibu n'ebibuzzo omu mirimo yaabo. Akatabo aka katebeekanisiibwe omu bicweka ebirkworekwa ahaifo:

### OKWETEGYEREZA OBUZIBU OBURIHO

Obuzibu bw'eb'yokwerinda omu kukozesa kompyuta nibushangwa buri omwe weena orikukozesa tekinorogye ya intaneti kuruga aha bantu ba burijo kuza ahari ba purezidenti. Okugyeragyeranisa n'abantu aba burijo hoona, ebizibu nibingi kyahika aha barwanirizi b'obugabe bw'abantu ahaw'emirimo yaabo ei barikukorera aha intaneti n'ezindi nk'ozesa za kompyuta. Omu kicweka eki nitwija kuruga aha kiteekateeko ky'obuzibu kwonka tureebe aha miringo y'obuzibu obrikureetaho enkozesza ya tekinorogye n'ebi erikureetaho omu kugikozesa. Noija kwega kumanya ebintu byawe ebiri omu kabi munonga reero otandikye kuba nibyo waabanza kuteerah oburyo bw'okukyendeeza aha buzibu obu biriho.

### EBIGYENDERERWA BITAANO BY'EBY'OKWERINDA

Ekicweka ky'akatabo aka ekyasigara nikija kureeba aha miringo etaano y'eb'yokwerinda omu kukozesa intaneti n'endijo miringo y'okukozesa kompyuta yoona hamwe neeyongyera ahaby'okwerinda kwawe omu nkozesza ya intaneti n'endijo miringo y'okukozesa kompyuta. Ebicweka ebi tibigyendereirwe kumarwayo omu bwijwire bwabyo, kandi tikirkubaasika kushomesa emyoga yoona kurabira omu kihandiiko eki nk'oku puroguraamu za kompyuta zirikuhinduka obwire bwona, kwonka nitwija kukworeka ebihandiiko ebirkuguma aha mutindo byaine ah'okujuriza ahasya munonga. Ebigyendererwa byaitu bitaano by'eb'yokwerinda nibyo ebi:



## **EBY'OKWERINDA BIKURU AHABW'EBYOMA EBI TURIKUKOZESA**

Twine obujunaanizibwa aha byoma byaitu ebi turikukozesa (kutari nk'oku turikukitwara!), kwonka nitumanya kurungi okubikozesa? Nitukora kyona ekirikubaasika kubikuumira omu mbeera nungi y'okukozesibwamu bitarikutaahirirwa bikooko (viruses) hamwe b'obundi buzibu oburikubaasa kubibaho kubiteganisa? Omu kicweka eki, nitwija kugamba aha miringo mirungi y'enkora ya kompyuta n'okukozesa za puroguraamu.

## **OKU ORIKURINDA DATA NARI EBIBIIKIRWE AHARI ZA KOMPYUTA, FLASH DISKS, EBINDI BYOMA EBIKUKOZESIBWA AHARI KOMPYUTA N'AMASIMU G'OMUNGARO**

Data neebiikwa aha kompyuta ya laptop, kompyuta ey'ahameeza, esimu z'omungaro, ipads, ebyoma ebirikukozesibwa ahari kompyuta na USB thumb drives. Omuntu ku akubaire naaza kutunga ebyoma ebi, nari akakopoeroraho za fairo nari arikurabira omu netiwaaka, naabaasa kubishoma (nari kuhinduramu) omu data egyo? Omu kicweka eki, nituza kugamba aha kiteekateeko n'enkora y'okukuuma data orikukozesa enkora erikumanya nka encryption, erikukuuma ebihandiiko narishi data nk'oku erikuba eri aha byoma byawe, ebiikire nari nari yaaba eri omu muringo gurikutiinisa. Namunonga, data n'eba eri omu kabi waaba oine kope emwe yonka y'ebihandiiko by'omugasho munonga nabwanyima kope egyo ekabura ahabwa kompyuta kutaahirirwa ekikooko, okwibwa, nari okusiisikara, nari ahabw'ebindi bizibu ebirikuhika ahari kompyuta. Nitwija kureeba aha mugasho gw'okubiika za kope hamwe n'okuteekateeka aha y'eb'okwerinda kwa kope ezirikubiikwa.

## **EBY'OKWERINDA BY'EBIHANDIIKO NARISHI BYA DATA ERIKUTAMBUZIBWA KURABIRA OMURI ZA NETIWAAKA**

Eky'omuhendo munonga kompyuta n'amasi mu byaitu n'ekigyendererwa ky'okuhurizana n'ebindi byoma kurabira omu intaneti na za netiwaaka za mobayiro. Empurizana neekorwa omu miringo mingi nka za email, web browsing, okuhandiika n'okugarukamu obutumwa ahonaaho, okugambira aha simu

orikukozesa intaneti hamwe n'okuteera esimu n'okusindika obutumwa okwa burijo (Nikigambwaho omu by'okwerinda kw'ebyma bya mobayiro).

Nitwija kureeba aha muringo ogu empurizaana ezi zirikukorwa reero twetegyereze ebirikukwata aha by'okwerinda kwabyo, namunonga omu mbeera ey'okweyongyera omu kuzironderezaho.

## **EBY'OKWERINDA BYA ZA AKAUNTI**

Nitubaasa kukora tuta kureeba ngu za akauti zaitu ez'aha intaneti n'ez'ebyma ebitarikukorera aha intaneti tibyahendwa kwigurwa abatarikwikirizibwa, kikarugamu okubura kwa datanari ebihandiiko ebiibikkireho, okumanya, hamwe n'okukora ebintu ebibi omu maziina gaitu? Enkora nungi ehikire kukozesibwa n'okubisiba omu muringo ogutarikurahuka kukyengwa nka okukozesa eshuura z'ekihama narishi passwords zigumire, okwigura emirundi ebiri kuhamya ku naiwe ohikire kwiguraho kandi n'abarikukora aha byaza paasiwaadi nibagambwaho aha.

## **EBY'OKWERINDA AHABW'EBYOMA BYA MOBAYIRO EBIRIKIKOZESIBWA OMU BY'EMPURIZANA**

Amasimu aga burijo (amaraka n'obutumwa tigarakozirwe n'okuteekateeka ahaby'okwerinda. Esimu ez'omurembe (smartphones) niziija n'ebirungi n'ebibi omu by'okwerinda, kandi ebyo byona eby'okwerinda eby'aharuguru nitubyegyeraho ahabw'okuba byaine akawate n'esimu z'omungaro.

## **OKU ORIKUKOZESA AKATABO AKA**

Teekateeka aha katabo aka nka omugyenzi mutaahi waawe omu rugyendo rwawe kwongyera aha by'okwerinda omu kukozesa intaneti. Tuttiiremu ebintu bingi omu kukozeseza aha intaneti n'ah'orikubaasa kujuriza kandi obwire obwingi noija kwetaaga kukozesa emyanya y'okujuriza egi okutunga okushoboororerwa omu bwijwire ahari buri kintu. N'obumwe emyanya ehairwe kujurizamu neebaasa kuba etarikumara hoona noija kwenda kuza omuri za search engines okaronda amakuru n'obundi butumwa obwakubaasa kuyamba kumaraho obureemezi oburikubaasa kwijaho

# OKWETEGYEREZA AKABI NARI OBUZIBU

Tihariho omuringo gumwe ogurikubaasa kukureetera waaguma origye omu kukoza intaneti. Eby'okwerinda omu kukoza intaneti tikiri aha kugira ngu ni bikwato ki ebi orikukoza, kureka n'okwetegyereza obuzibu obu orikubugana n'oku orikubaasa kubutwaza. Okuguma origye, nooteekwa kusharaho eky'orikwetaaga kukuuma, kandi n'ou orikwenda kukishereka. Obuzibu nibubaasa kuhinduka kurugiirira ah'orikuba ori, eki orikukora, na nooha ou orikukora nawe. N'ahabwekyo, okwenda kusharaho aha muringo gw'okukoza oguriije kukubeera murungi, oshemereire kutaho oburyo bw'okwetegyereza ekizibu.

Waaba nookora okwetegyereza oku, hariho ebibuuzo bikuru bitaano ebi ohikire kwebuuza:

1. Ni ki eki orikwenda kurinda?
2. N'oha ou orikukirinda ngu atakishiisha?
3. Nookireeba ota ngu noobaasa kwija kwetaaga kukikuuma?
4. Ku waakuremwa ni bibi ki ebirikubaasa kurugamu?
5. Ni buzibu ki obu oyeteekateekire kurabamu omu kubizibira?

Buri kuturikugamba aha kibuuzo ky'okubanza, nitukira kugamba aha bintu eby'obugaiga. Ekintu ky'obugaiga n'eki orikutwara nk'eky'omuhendo kandi eki orikwenda kurinda. Twaba nitugamba ahaby'okwerinda by'okukoza intaneti, ebintu ebiturikugambaho nibikira kuba biri ebihandiiko/ebihandiikirwe. Eky'okureeberaho, email zaawe, amaziina n'enamba ebibikirwe, obutumwa, naaza fairo ebyo byona n'by'obugaiga. Ebyoma byawe byona n'eb'yobugaiga.

Handiika risiti y'ebantu (data) ebi obiikire, ahu bibiikire, n'oha orikubaasa kubireeba, n'ekirikuremesa abandi kubireeba.

Okwenda kugarukamu ekibuuzo kya kabiri, "N'oha ou orikukirinda ngu atakishiisha," Ni kikuru kwetegyereza orikubaasa kugira eki yaakukora nari kukikora ebihandiiko byawe ebibiikire, nari n'oha omuzigu waawe. Omuzigu waawe n'omuntu weena nari ekintu ekirikureebeka kubaasa kureeta akabi aha kintu nari ebintu by'obugaiga. Eby'okureeberaho ebirikubaasa

kuba abazigu ni ebitongore nari za kampuni z'obushubuzi, ebihanda ebirikukorera za gavumenti, nari omuntu orikuhenda emikutu eiabantu boona barikukoza kubaasa kwiba ebihama byabo.

Handiika risiti y'abarikubaasa kuba nibenda kwiba nari kureeba empurizana n'ebihama (data) byawe. Naabaasa kuba omuntu buntu, ekitongore kya gavumenti, nari kampuni.

Akabi n'ekintu ekibi ekirikubaasa kuba aha kintu eky'obugaiga. Hariho emihanda mingi oku omuzigu arikubaasa kuba ow'akabi aha bihandiiko (data) byawe. Eky'okureeberaho omuzigu naabaasa kushoma obutumwa bwawe obu orikwohoreza bwaba niburaba aha netiwaaka, nari nibabaasa kusangura nari bariise ekikooko obutumwa bwawe nari data yaawe. Omuzigu hoona naabaasa kukuuremesa kureeba nari kukozesa ebihandiiko byawe nari data yaawe.

Ebigyendererwa by'abazigu nibitaana munonga, nk'oku barikutwaza omu kubikora kurikutaana. Gavumenti erikugyezaho kuzibira okujanjaara kwa video erikworeka pooriisi erikukoza obukambwe nari amaani aha bantu neebaasa kwenda ngu esangure nari ekyendeeze okujanjaara kwa video egoy, kandi we orikuhakanisa omu by'obutegyeki naabaasa kwenda kutunga ebihama akabiteera omu kyapa akabijanjaaza iwe otakimanyire.

Handiika ebi omuzigu waawe arikubaasa kwenda kukozesa ebihandiiko (data) byawe.

Amaani g'orikukurwanisa nakyo n'ekintu kikuru ky'okuteekateekaho. Eky'okureeberaho kampuni y'esimu ei orikukoza netiwaaka yaayo eine byona ebirikukukwataho, n'ahabwekyo eine obushoboorozi bw'okukoza data yaawe kubaasa kukikora kubi. Orikwenda kwiba ebihama byawe ari aha netiwaaka ya WiFi naabaasa kureeba nari kwiba ebihama byawe ebirinzirwe omu nkora ya encryption. Gavumenti yaawe neebaasa kuba eine obushoboorozi bwingi.



Okugarukamu ekibuuzo kya kashatu, nooteekwa kuteekateeka aha kabi akariho. Akabi n'ekibi ekirikureebeka kirikubaasa kubaho aha kintu ky'obuguzi , kandi nikiba kiine amaani g'okubaasa kubaho. N'obu ekitongore kyawe ky'esimu kiine obushoboorozi kureeba ebirikukukwataho, akabi k'okubita aha intaneti kushiisha ekitiinisa kyawe tikamaani. Ni kikuru munonga kutaanisa ahagati y'okutiinatiinisibwa n'okuba omu kabi. Okutiinatiinisibwa n'obu kiraabe kiri ekintu kibi ekirikubaasa kuhikiirizibwa, okuba omu kabi n'embeera ey'okushanga ngu nikabaasa kubaho. Eky'okureeberaho hariho okutiinatiinisibwa ngu ofisi yanyu neebaasa kuhendwa kwonka akabi k'eki kubaho ni kakye omu mwanya ogurimu abakuumi nari bariraanwa barungi hatari omu mwanya ahu orikureebwa ori omuntu mubi.

Okukora okushwijuma akabi akariho nikikorwa aha kukunda kw'omuntu n'enkora ei arikwenda; ti buri omwe ngu aine ebyo nk'ebigyendererwa bye bikuru nari kureeba okutiinatiinisibwa okwo omu muringo nigwe gumwe. Abantu baangi nibashanga kumwe aha kutiinatiinisibwa kutarikwikirizibwa n'obu akabi kaakuba kari kata, ahabw'okuba okuruga okutiinatiinisibwa kwonka ahu kurikubeeraho tikurikwingana na muhendogw'okuzibira. Obumwe n'obumwe, abantu nibeehuzya obuzibu bwingi ahabw'okuba tibarikureeba okutiinatiinisibwa nk'ekizibu.

#### **Hati, reka tureebe aha ky'okwetegyereza obuzibu oburiho**

Ofisi yaawe yaaba eine za akaunti z'abantu abarikukora omurimo gw'okwanika ebikorwa by'obwibi n'oburi bw'enguzi omu ofisi za gavumenti, noobaasa kwenda kwebuuza ebi;

- Ofisi eshemereire kugira abakuumi omu shaaha 24 zonna, n'okukozesa za kamera?
- Tukozese nkufuru ki ez'okukingisa/kusibisa?
- Nooteekateeka ngu nitwetaaga kugira eby'okwerinda by'omurembe okwongyerera aha nkufuru y'orwigi egumire munonga?
- Eki turikugyezaho kurinda kiine mugasho ki?

Obwamushinja ngu nikibaasa kumaraho oburi bw'enguzi nari obushuma omu ofisi za gavumenti

- Hariho buzibu ki? Abu kirikukwatwaho nari abarikujunaanwa nibaija kugyezaho kuhenda bakatahamu kwiba za fairo ezi
- Ni kabi ki akarikubaasa kubaho abarikujunaanwa baahenda bakataahamu? Nikibaasa kubaho?
  - Abarikujunaanwa oburi bw'enguzi baaheza kumanya obwamushainja obu bahairweho, nibabaasa kutaahirira bakore kubi ababahaireho obwa mushainja?
  - Nibabaasa kwiba za fairo baite obwa mushinja oburikubaasa kukozesibwa kubajunaana?

Waaheza kwebuuza ebibuuzo ebi, n'oba noobaasa kwetegyereza emihanda y'okukozesa. Ebintu byawe byaba biri eby'omuhendo, kwonka emigisha y'okuhenda kutahamu eri mikye, n'ahabwekyo noobaasa kuba otarikwetaaga kushohoza esente nyingi munonga kugura enkufuru z'okusibisa. Ogundi omuringo, oburemeezi bwaba buri ahaiguru, noobaasa kwetaaga kugura enkufuru ezirikukizayo okuguma omu katare, na kyabaasika oteho n'okugura ogundi muringo gw'ebi'okwerinda nka za kamera. Ebiro ebi obwire obwingi buri kimwe omu by'entuura nikihinduka.

# EBY'OKWERINDA BIKURU AHABW'EBYOMA EBI TURIKUKOZESA

## EBY'OKWERINDA OMU KUKOZESA INTANETI OMU BICWEKA BITAANO

**EKIKURU:** Ebikorwa ebirikushoboororwaho omu bicweka ebiri ahaifo n'eby'obukugu kandi nibibaasa kugira obuzibu butarikushushana. Okukora empindahinduka omu byoma byawe nikibaasa kureetaho enshobi ziteeteekateekirwe nari zaaba zitatiirwegye omu nkora nikibaasa kureetaho okufeerwa ebibiikireho - gyete data.

Nikihaburwa kugira ngu hakorwe okucondooza kurikumara aha mianda yoona erikwetaagisa kukora empinduka z'obukugu ezishemereire aha kyoma kyawe n'embeera ei orimu, waaba oine data y'omugasho gibiike aha rubaju, enamba z'ekihama (passwords) nsya zibiikire gye, (Reeba eby'okwerinda bya za akaunti aha bw'ebyma ebirikukwatwaho), kandi okore risiti y'obuyambi bw'ekikugu oburikwetaagisa.

Okwongyera ahari ekyo, eby'amateeka n'ebiteekateeko aha by'okwerinda by'enkozesya ya intaneti nibitaana kandi buri muntu ashemereire kugyezaho kwetegyereza akabi akariho kurugiirira aha mbeera yaabyo.

Kurugiirira aha tekinorogye ya intaneti kutaho, kubiika n'okukozesa hamwe obutumwa.

Abarikubikozesa boona nibakozesa emigisha egi barikukozesa ebyoma. Ebi nibibaasa kuba kompyuta ez'ahameeza, za laptop, esimu ez'omurembe (smartphones), nari ebindi byoma. Risiti yaabyo eyeyongire munonga nanebyo ebirikumanywa nk'ebintu bya intaneti ahu buri kimwe (harimu esimu yaawe, emotoka yaawe, eshaaha hamwe na furiigi!) ahu buri kimwe kirikubaasa kukozesibwa aha intaneti birikubaasa kwohereza n'okwakiira obutumwa.

Nitwesiga munonga ebyoma byaitu n'obutumwa bwingi oburikushoboorora turi bahi, nkahi ahu turi, eki turikukora, puraani ezi turikukora nabu turikuzikora puraani zaitu.

Ebyoma ebi nibigyendererwa ekoheneso ky'okubarumba, okushendashenda n'okubataahirira mutakimanyire.

Waaba n'omanya ebi, ni kikuru munonga ahabwa boona abarikukozesa tekinorogye na intaneti kugira okumanya n'obukugu kurinda ebyoma byabo kugira ngu abarikubaasa kubyabamu ebihama batabihikaho, nari puroguraamu ya malware erikubireetera ebikooko etabikwata hamwe n'obundi buzibu oburikubaasa kuta amagara gaabo omu kabi ahabw'okukwata omu byoma byabo nari kubitaririra.



Eby'okwerinda bikuru ahabw'ebyma ebi turikukozesa nibikwata aha nkora n'emihanda erikuta ebyma byawo omu muringo murungi okutahikwaho okuteganisibwa.

### NIMBAASA NTA KWERINDA OKUTAAHIRIRWA PUROGURAAMU YA MALWARE?

Malware omu rurimi orwanguhi ni "Puroguraamu y'obwinazi," ni puroguraamu erikukozesibwa kushiisha za kompyuta. Neekora omu miringo mingi harimu egi, kwonka hatari ahari egi ahu erikukoma, okuteganisa okukora kwa kompyuta, okurundaana obutumwa bw'omugasho, okweyeterera ondijo muntu kuba niwe arikukozesa kompyuta, okusindika obutumwa butaine kakwate kandi butashabirwe nari obutumwa bw'ekikwangara, nari okutaahirira kompyuta z'abantu buntu. Puroguraamu za malware ezirikukira obwingi ziine akakwate n'ebikorwa by'ebihagaro, kandi neekira kukozesibwa omu kutunga ebihama birikukozesibwa omu kubiika omu banka nari ebirukozesibwa kwigura akaunti za email nari social media. Malware hoona nabwe neekozesibwa aba za gavumenti n'abo abatari ba za gavumenti okutunga oburyo bw'okukozesa emihanda etari omu mateeka kumanya ebiri ahari za akaunti z'abantu ezirinzirwe n'enkora ya encryption n'ekigyendererwa ky'okubakoraho obwa mbega. Eky'okureeberaho omu mwaka 2015 kikagambwa ku tiimu y'abantu barikukora puroguraamu ya malware bakaba nibagiguza amahanga Ethiopia, Sudan, Egypt, Morocco na Tunisia<sup>19</sup> hatakabaireyo orutaro rw'okurwanirira obusingye. Puroguraamu ya malware eine ebintu bingi ebi erikukora; neebaasa kwikiriza entahirizi kukopoorora ebiri aha webu arikukozesa emizindaaro ya webu egoy, okwihamu puroguraamu (antiviruses) ezitiirwemu kumanyisa n'okurwanisa puroguraamu ezikureeta ebikooko omu kompyuta, okukopoorora enyuguta ezi omuntu arikutaasya omu kompyuta, kukoporora za email n'ebindi bihandiiko, okwiba za paasiwaadi n'ebindi bingi.

### PUROGURAAMU YA ANTI-VIRUS SOFTWARE Y'OKUZIBIRA, OKUMANYA N'OKWIHA OMU KOMPYUTA PUROGURAAMU ERIKUREETAMU EKIKOOKO EYA MALWARE

Oshemereire kukozesa Puroguraamu ya Anti-Virus Software y'okuzibira, okutata n'okwiha puroguraamu erikureta ebikooko eya Malware omu kompyuta yaawe n'omu simu yaawe y'omurembe (smartphone). Puroguraamu ya Anti-Virus Software y'okuzibira, okutata n'okwiha omu Kompyuta Puroguraamu erikureetamu ekikooko eya Malware n'ebaasa kuba ey'omugasho omu kurwanisa ebikooko ebirkwija bwija bitaresirwe bigyendereirwe ebirkubaasa kuba nibikozesibwa

enkozi z'ebihagaro n'ekigyendererwa ky'okukora kubi abantu. Baitu puroguraamu ya anti-virus software nekira obutakora kurungi ahari za virus ezirikusindikwa zigyendereirwe n'okundi kutahirirwa okw'ekika kyahaiguru, nka ezo ezirikuguzibwa tiimu erikuhenda ekatahirira za kompyuta.

**Kuma n'omurwanirizi w'obugabe bw'abantu ahaby'eitaka. Akagura kompyuta nsya emyezi mukaaga ehangwire kwonka hati neekora mpura, naareeba obuntu burikuguma nibuza aha kirahure kya kompyuta obu atarikwetegyereza, kandi na data y'ahasimu y'omungaro neereebeka nk'erikwirukanga ekahwaho ahonaaho. Akaba aine ebihandiiko bya purogyekiti aha flash drive kwonka bikaba biguma nibrugaho nibitura. Tarikwetegyereza ekirih, kompyuta ni nsya kandi puroguraamu zonna akazitamu arikuziha aha intaneti hamwe n'omuri banywani be munonga.**

**Naabaasa kuba naateeganisibwa ekikooko kya malware aha kompyuta ye. Puroguraamu y'ekikooko kya Malware n'ey'akabi kandi ekikooko eki nikiteganisa boona abarikukozesa kompyuta. Puroguraamu y'ekikooko kya Malware neebaasa kureeta waafeerwa ebihandiiko, kompyuta okukora mpura mpura, Okwibwaho ebihandiiko, n'okukorwaho obwa mbega.**

### EBIRIKWOREKA NGU KOMPYUTA BAGIKWASIREMU

Kyaba kitarikubaasika kukwata ekikooko kya malware orikukozesa puroguraamu ya antivirus software, obumwe n'obumwe nikiba nikikibasika kumanya ngu kompyuta bagikwasiremu. Eky'okureeberaho, Google naija kuheereza okurabura abarikukozesa email za Gmail erikugamba ngu naiyikiriza ku akaunti yaawe etaahiriirwe abantu abaine akakwate na gavumenti. Okwongyera aho, noobaasa kureeba akataara karikworeka ku vidiyo kamera ya kompyuta yaawe eriyo neekwata ebishushani ngu boona abarikukozesa intaneti babireebe kandi obwe iwe otagitaho (hoona nabwe puroguraamu ya malware y'omutindo nayo neebaasa kugiihaho)—ogu nagwe nigubaasa kuba omuringo gw'okumanya ngu kompyuta yaawe bagikwasiremu. Obundi buponero tiburi bw'amaani; noobaasa kukimanya ku email yaawe erikwigurwa omu muringo ogu otarikwetegyereza gye nari oku ogitebekaniise kuhindwirwe kusindikira za kopi za email zaawe aha email ei otarikwetegyereza. Waaba orikubaasa kuguma nooreeba ebihandiiko ebirkuraaba aha netiwaaka yaaawe, obwire obu birikugyenderaho hamwe n'obwingi bwabyo, noobaasa kureeba ngu

<sup>19</sup> Kaspersky, Puroguraamu ya malware niki nobaasa ota kugyerinda, <http://usa.kaspersky.com/internet-security-center/internet-safe-ty/> Puroguraamu ya malware niki nobaasa ota kugyerinda -it#.WJwGtX\_3Mo9, Accessed on the 8th February 2017

kompyuta yaawe ekwasirwemu. Kompyuta yaawe hati eshemereire kuba eine enkora y'okwerinda erikumanya nka Firewall ahabwa netiwaaka yaawe namunonga ezirikumanya nka built in Windows nari OS X firewall kwonka n'eky'omugasho kutamu n'erikumanya nka commercial firewalls emwe aha miringo y'eb'y'okwerinda bya intaneti ebirikumanya nka InternetSecuritysuites.

**Entahirizi abarikushiisha kompyuta nibabaasa bata kukoza puroguraamu ya Malware kuba ninye baataahirira?**

Omuhanda oguhikire kuzibira okutaahirirwa kwa puroguraamu ya malware n'okugyerinda kureeba ngu tiyaakutaahirira na kakye koona. Eki nikibaasa kuguma kukihikaho omuzigu waawe arikubaasa kukoza eki barikweta zero day attacks omu rurimi rwa kompyuta - ahu orikukora okutaahirirwa okwe arikukoza okubaho kw'obuzibu obwosireho butamanyirwe omu puroguraamu ezirikozesibwa omu kompyuta. Teekateeka aha kompyuta yaawe kuba omwanya ogukuumirwe munonga; kandi zero day neebaasa kuba omwanya ogw'ekihama ogwesherekire ogu orikurabamu kutaahamu kwonka iwe otarikugumanya, kwonka ogw'ogwe orikwenda kukora okutaahirira ajumbwire. Torikubaasa kwerinda haaba hariho omuhanda gw'ekihama gw'okurabamu kutaahamu kandi obwe iwe otarikumanya okubaho kwagwe. Za gavumenti hamwe n'ebitongore ebirikukwatisa amateeka nibitaho emihanda mingi eyaakwetwa zero day exploits ey'okukoza ahantu ahu barikuba nibenda kutaahirira na puroguraamu ya malware. Enkozi z'ebihagaro n'abandi abari nk'abo nabo nibabaasa enkora niyo emwe ya zero day exploits el barikubaasa kukoza omu kihama kuta puroguraamu ya malware omu kompyuta yaawe. Kwonka zero day exploits ezo n'ez'omuhendo gw'ahaiguru kandi niziseera waaza kugaruka kuzikozesa ( waaba waakozeise omuhanda gw'ekihama kutaaha omu kishengye ky'obukumi ekitiirweho okukuuma kompyuta, nkyongyera emigisha y'abandi bantu nabo kuhareeba). Nikikira kubaho abarikwenda kukora okutaahirira kukutega kuba niiwe waayeteeramu puroguraamu ya malware egyo.

Hariho emiringo mingi ei orikwenda kukora okutaahirira arikubaasa kukutegamu kuba niiwe waayeteeramu puroguraamu ya malware omu kompyuta yaawe. Nibabaasa kubuzabuza eki barikwenda ngu otetu kuba omuhanda gw'okukutwara aha website, kuba ekihandiiko, PDF nari obundi puroguraamu y'okurinda kompyuta yaawe. Noobaasa kutaahirirwa kurabira omu email (erikubaasa kureebwa kuba neeruga ow'omuntu ou orikumanya), kurabira omu butumwa nari message aha Skype nari Twitter nari n'okurabira aha link eheirwe kuruga aha peegi ya Facebook yaawe. Oku barikukwenda kwaba kuri okw'amaani, orikukora naija kureeba ngu

nikishendashenda kubaasa kwigura puroguraamu ya malware egi.

Eky'okureeberaho, omukwezi kwa ikumi n'ebiri 2014, orikukurira ekitongore kya Ethiopia Satellite Television (ESAT) Neamin Zeleke akataahirirwa omu ofisi omu USA na puroguraamu erikutatira hare kuruga aha tiimu eyaabaire neemwenda eyaayohereziibwe nka email erikugamba kuba yaabaire eine amakuru garikukwata aha buruuru bwa Ethiopia.

Om u mwaka 2013, omwe ahari bagyenzi ba Zaleke akataahirirwa puroguraamu ya malware bwanyima y'okwigura eyaareebekire kuba fairo ya Microsoft word. Baija baakimanya bwanyima ngu ekaba eri tiimu y'abataahirizi eyaabaire neekorera aha rimooti. Omuringo mukuru gw'okwehara okuataahirirwa puroguraamu ya malware egi n'okwehara okwigura ebihandiiko ebi nari okuta puroguraamu ya malware omu kompyuta yaawe. Abantu abaine obukugu n'obumanyi bwingi nibaija kubaasa kumanya puroguraamu ya malware niki nari etariyo, kwonka okutaahirirwa okuteekateekire nikubaasa kuba nikushendashenda. Waaba nookozesa Gmail, okwigura ebihandiiko ebirkwekyengyerwa ebiri aha Google Drive kutari oku byaigura (Reeba ekishushani ahaw'eky'okureeberaho) nikibaasa kurinda kompyuta yaawe ku kyakubaho ekakwatwa. Okukozesa enkora y'okukozesa kompyuta erimu eby'okwerinda bihami, nka Ubuntu, Chrome OS, nari Mac OS X nkyongyera munonga emigisha yaawe y'okwerinda obukodyo bw'okwikiriza puroguraamu ya malware, kwonka tikirkwija kukuhonesa abazigu abaine okumanya kw'ekika kyaiguru.

Ekindi kintu eki orikubaasa kukora kurinda kompyuta yaawe obutataahirirwa puroguraamu ya malware n'okureeba ngu burijo nookozesa puroguraamu ensya aha kompyuta yaawe hamwe n'okwigura fairo z'eb'y'okwerinda ensya. Oku oburemeezi obusya burikuguma nibujumburwa omuri za puroguraamu, za kampuni nizibaasa kutereeza ebizibu ebyo kandi ziheereze okutereezibwa okwo nka puroguraamu eri aha murembe, kwonka torikwija kuganyirwa omu murimo gwabo ogwo kureka waabanza waagita omu kompyuta yaawe. Hariho enyikiriza ya boona ngu waaba nookozesa

Puroguraamu ya windows enkuru, torikubaasa nari toshemereire kwikiriza okwongyera n'okutunguura puroguraamu. Eki tikihikire. Reeba ahaifo ebirkukiraho aha kuguma nooyongyera n'okutunguura puroguraamu zaawe.

Ekindi kintu eki orikubaasa kukora kurinda kompyuta yaawe obutataahirirwa puroguraamu ya malware n'okureeba ngu burijo nookozesa puroguraamu ensya aha kompyuta yaawe hamwe n'okwigura fairo



z'ebi'okwerinda ensya. Oku oburemeezi obusya burikuguma nibujumburwa omuri za puroguraamu, za kampuni nizibaasa kutereeza ebizibу ebyo kandi ziheereze okutereezibwa okwo nka puroguraamu eri aha murembe, kwonka torikwija kuganyirwa omu murimo gwabo ogwo kureka waabanza waagita omu kompyuta yaawe. Hariho enyikiriza ya boona ngu waaba nookozesa

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Waaba nookozesa Gmail noobaasa kureeba ekihandiiko ekirihе orikuzesa akabokisi (kutari okukaigura). Nikija kwigurwa kirikurabira omu bugyegyena bwa Google kutari kwigurira omu kompyuta yaawe, orikuhona obuzibu obw'okutaahirirwa oburi omu fairo omunda.

Nshemereire kukora ki naashanga puroguraamu ya malware aha kompyuta yangye?

Waashanga puroguraamu ya malware aha kompyuta yaawe, kompyuta yaawe giihe omu intaneti kandi otagikozesa ahonaaho. Buri kuteera aha keyboard buri kyokutaasyamu noobaasa kuba nookisindika ow'omuzigu otaahiriire kompyuta yaawe. Noobaasa kwenda kutwara kompyuta yaawe ow'omukugu omu by'okwerinda, orikubaasa kujumbura ebirukirahо aha hari puroguraamu ya malware. Waaba waareebire puroguraamu ya malware, okugijhamu nikibaasa okureetaho eby'okwerinda ahawwa kompyuta yaawe. Zimwe aha puroguraamu za malware nizihereza orikuzisindika omugisha gw'okubaasa kuragiira kompyuta erimu ekikooko ekyo oku arikwenda - kandi tihariho ekirkukuha obuhame ngu entaahirizi egoytiyaatamu ezindi puroguraamu z'eitima obwire obu niwe arikuba aine obushoboorozi aha kyoma kyawe.

Igura omu kompyuta ei orikumanya ngu erige ohindure za paasiwaadi zaawe; buri paasiwaadi ei orikutaasya omu kompyuta erimu puroguraamu y'ebikooko egoyogimanyе ngu eine obuzibu bw'okuteganisibwa. Nooba nooyetenga kuta omu kompyuta yaawe puroguraamu y'okugikozesa ahaw'okwenda kwihamu puroguraamu eya malware. Egi naija kwihamu puroguraamu enyingi eza malware kwonka zimwe ez'omutindo gw'ekika ky'ahaiguru nizangiramu.

#### OKUGUMA NOOKORA PUROGURAAMU ZAAWE EZ'OMUREMBE

Ebyoma na za puroguraamu bya kompyuta tibiriburamu obuzibu. Burijio nihaija kubamu obuzibu bw'okukora

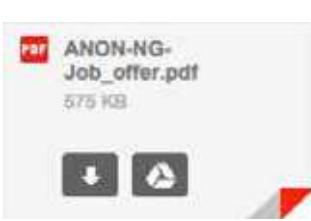
kurungi, obutatebeekana n'enshonga z'ebi'okwerinda ebirikubaho aha buri puroguraamu: Erimu puroguraamu erikuzesa kompyuta yaawe(windows, OSX Linux), esimu yaawe (Android, iSO, Windows Phone) puroguraamu yaawe (Adobe, Java, Office, Chrome, Firefox, n'ebindi.). Hariho akatare k'abarikucondooza akariyo nikakora karikuguma nikaronda ah'obuzibu buri omunkora ya za kompyuta zaitu. Abacondoozi aba nibabaasa kuba abantu barungi abarikworeka ahu oburemeezi buri omu rwatu n'okuhabura abarikukora za puroguraamu kutereeza ahari obuzibu, nari nibabaasa kuba bari abantu babi abarikureeba ahu oburemeezi buri bakabuguza enkozi z'ebihagarо na za gavumenti ezirkwenda kubigura ziine ekigyendererwa ky'okuzesa ahu oburemeezi buri aha barikuzesa puroguraamu ezi.

Waaba nooyenda oku oburemeezi obu burikuzesibwa munonga taayaayira aha; <https://www.exploit-db.com/> oyigure oreebe oburemeezi oburihо ni bungahi ahabwa puroguraamu ezi turikuzesa. Eki nikishoboorora ahabwaki burijio nitushabwa kuguma nitwongyera kutunguura enkora na puroguraamu za kompyuta zaitu.

Enkora y'okubanza omu kutunguura puroguraamu za kompyuta yaawe n'okureeba ngu nikiguma nokyekora buri kaire. Okugarukamu kureeba n'okushanga puroguraamu yaawe eri ey'omurembe. Oshemereire kureeba ngu buri kimwe kiri aha murembe kwonka zimwe ahari puroguraamu eziri nkuru kuguma ziri aha murembe harimu: Web browser yaawe (Chrome, Firefox, n'ebindi), Adobe reader, Adobe Flash, na Java.

Hariho puroguraamu ya busha erikuyamba okuronda puroguraamu ezitari aha murembe omu kompyuta yaawe kukorerwa omu mwanya gumwe.<sup>20</sup> Enkora y'ebi'okwerinda omu kompyuta erikumanya nka Flexera PSI neereeba puroguraamu zaawe ezitirwemu n'enamba z'ekika kyazo ezigyeragyeranisa n'ebika bya data ebiri aha intaneti eby'omurembe ebinywanisa n'ah'okwigura puroguraamu ez'ebika ebisia eby'omurembe. Puroguraamu yaawe ya antivirus neebaasa kuheereza enkora niyo emwe ahansi y'eziina erindi nka Smart scan' nari 'vulnerability scan'.

#### ENKORA ZA PUROGURAAMU EZITEINE BUZIBU



E k y ' o b u s a a s i  
ahaw'okugira ngu  
puroguraamu nizigira  
obuzibu zeetaaga  
okwongyerwaho obwire  
bwona, omuhanda  
gumwe ogwangudi  
kandi ogutaine buzibu

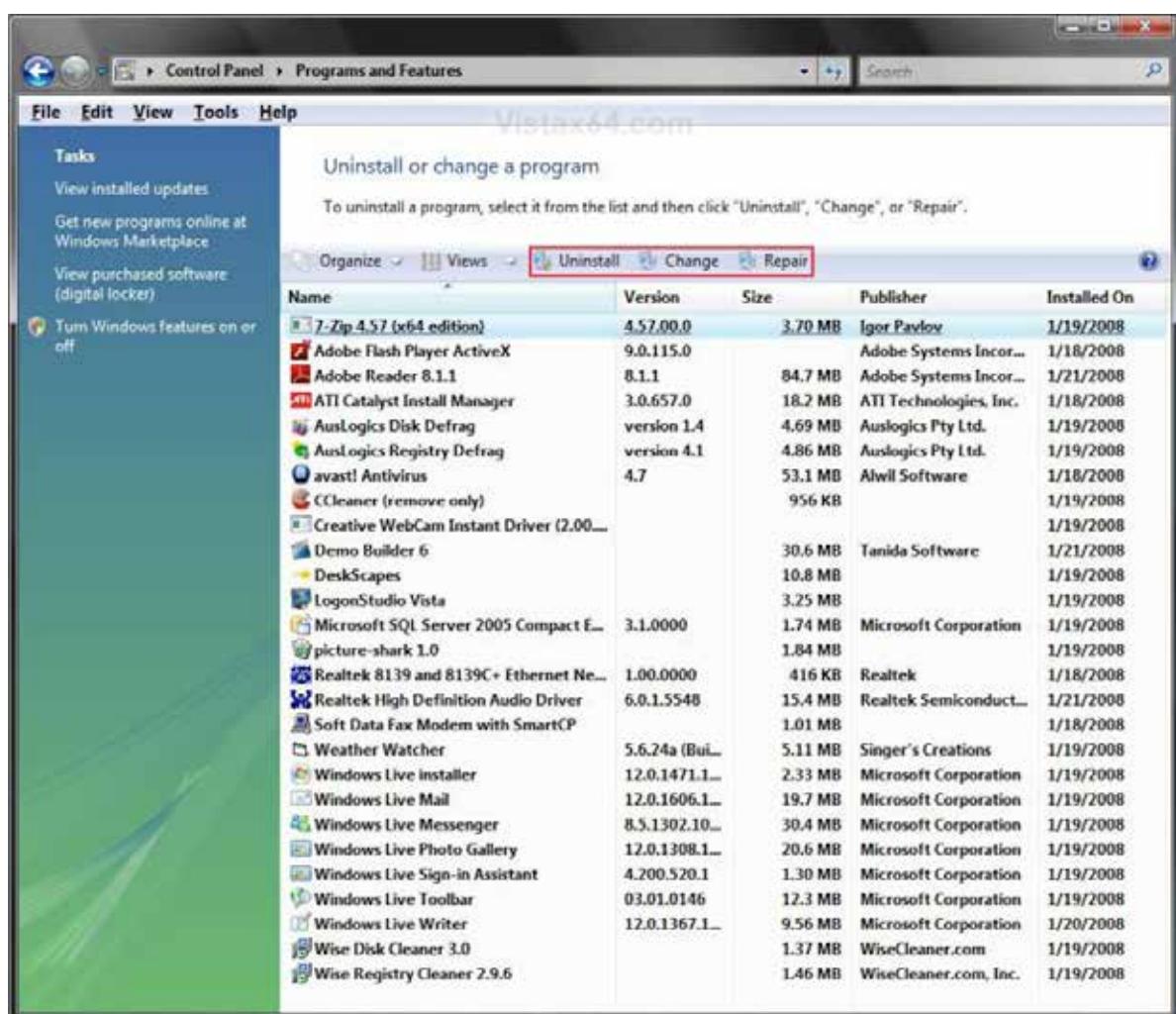
20 Flexera, "Staysecurebyupdatinginsecureprograms on your computer", <http://www.flexerasoftware.com/enterprise/products/software-vulnerability-management/personal-software-inspection/>, Accessed on the 8th February 2017

n'okwetantara okuta puroguraamu zitarikwengyesa omu kompyuta yaawe.

Puroguraamu za Adobe Flash na Oracle Java n'eibiri ezirkukira kushangwa zaine obuzibu. Tokaayetenga kugira emwe ahari ezi aha kompyuta yaawe nakakte koonaa.<sup>21</sup> Za aha risiti ya puroguraamu zaawe ezitirwemu omu kompyuta (Omu Windows: 'Yongyeramu/

Ihamu za Puroguraamu nari hindura puroguramu') kandi oshwijume busya ekitiirwemu. Hariho puroguraamu ezi

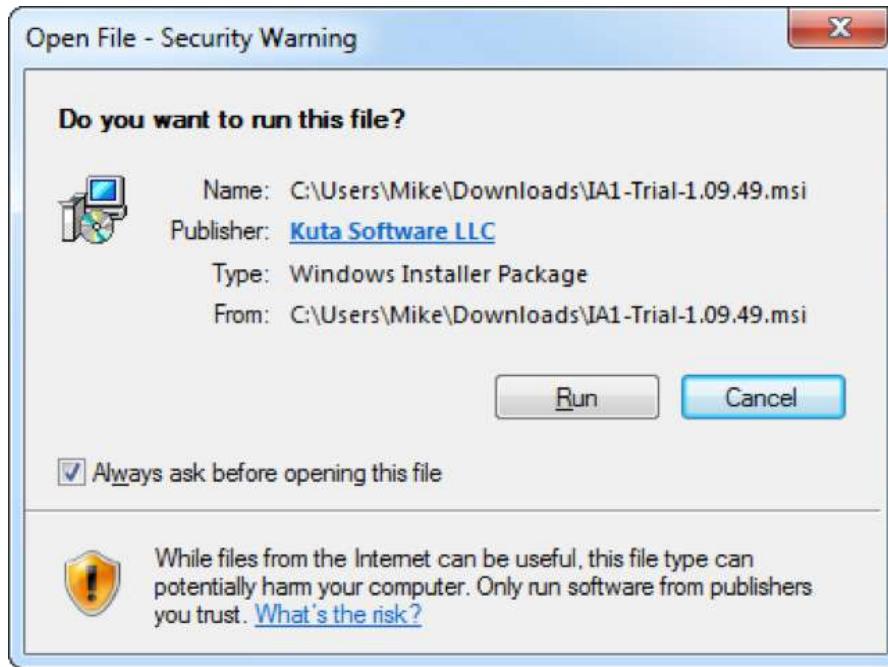
otarikumanya iziina ryazo? Zimwe ahari ezi nizibaasa kuba ziri ez'omugasho ahabw'okukora kwa kompyuta waawe, kwonka haagira ekirikureebeka kitarikwetegyerezibwa, oshemereire kukicondoozaho kuba kiri kintu ki, reero oshareho kureeba yaaba orikubaasa kukiihamu. Okukira munonga yekyengyere puroguraamu ezitirwemu ezitiineho ozishohoize arikworekwa omumwanya gw'ozishohoize ashemereire kuba arimu. Garuka orebe aha puroguraamu yaaba eine helper' browser toolbars ezaatiirwemu otazimanyire.



Waaheza kushwijuma puroguraamu ezitiirwe omu kompyuta yaawe, igura puroguramu erikukutwara aha intaneti nari aha web oronde za puroguraamu ezirkuba zongiirweho kandi nazo ozishwijume. Nk'oku kiri n'ezindi puroguraamu, 'na waaba oinemu nkye nazo nizikora' kandi oshemereire kureka enamba ya puroguraamu ez'orikwongyeramu kuguma ziri nkye ezirkwesigwa kandi ezirkuhamibwa.

Puroguraamu ezirkwongyerwamu omu kukozeisibwa tizirkwanguha omu kukozeisibwa ahabw'okuba nizibaasa kukozeisibwa omu kushoma n'okuhindura omu borthandiko ebiri aha puroguraamu yaawe erikukutwara aha intaneti na web kandi erikubaasa kuteebwamu nka za passwords, data erikukozeisibwa omu mirimo ya za banka n'obutumwa oburikuherezana aha social media.

<sup>21</sup> Google, Adobe Flash, Google Chrome includes a secured version of Adobe Flash inside of all its updates.



Eshaaha yoona ah'orikutungira omugisha gw'okwongyera kuta puroguraamu zaawe aha mutindo oshemereire okikore. Waabuuzibwa "kukikora hati" nari "kukora bwanyima" okikore ahonaaho nk'oku kirikubasika hatari kukyanga okakiihaho!! Oine n'omugisha gw'okutaho enkora ya kompyuta yaawe kuguma neekyekorera eki barikweta automatic updates, ogume ozitiireho.

Ahabw'okukozesa intaneti per(mb or per/gb, bonayo obwire kuta aha intaneti etarikurugaho nk'eya za university, library, office, nari cafe, reero otandike okukora updates za puroguraamu zaawe.



Puroguraamu ezi orikwigura zikaija n'ezindi ezitarikwetengwa zirikuraganisa kwongyera ezindi puroguraamu kandi obwe n'okuruga kare zishangirwe zitarikwendwa nari zitarikwetengwa kandi zirikubaasa kuba ziri mbi munonga kushiisha kompyuta yaawe. Reeba sitore aha itaneti<sup>22</sup> erikukwata aha test y'okutamu puroguramu 10 ez'omukutu gwa Download.com puroguraamu ezaareeteire kompyuta kusiisikara munonga!

Buri k'orikutamu nari kukora download ya puroguraamu, reeba owaashohoize puroguraamu. Abarikushohoza puroguraamu abaingi abarikumanya nibagyezaho kuta akamanyiso aha puroguraamu zaabo ekirkworeka ngu nibo zirikurugaho kandi tizikwasirwemu omukujanjaazibwa. Gyeragyerenisa ebishushani bibiri bya Windows ebirikworekwa birikuheereza obutumwa bw'okurabura aha screen zombi kureeba entaaniso eri aha puroguraamu eikiriziibwe n'etiikiriziibwe.

Ijuka, puroguraamu ezirkusinga ezi orikwetenga noobaasa kuzitunga aha bwabusha kuruga ahari za website z'ogwo orikuzishohoza. Waareeba omugisha gw'okuheebwa ekintu ahabwa busha eki waakubaire waaba nooshashurira, kibaasa kuba kirungi ky'okukubeihabeihakwonka kitari ky'amazima! Giramu okwegyendesereza noija kurinda sipidi, okubagye n'eb'yokwerinda bya kompyuta yaawe kumara obwire buringwa.

<sup>22</sup> How-To Geek, Here's what happens when you install the top 10 download.com apps <http://www.howtogeek.com/198622/heres-what-happens-when-you-install-the-top-10-download.com-apps/>, Accessed on the 8th February 2017

## AHOKWIHA PUROGURAAMU EZITAINA BUZIBU

Puroguraamu oshemereire kureeba ngu wagyezaho nk'oku kirikubaasika waaziha ahari ogwo orikuzishohoza. Eky'okureeberaho ni kirungi kwisha (download) Adobe Reader kuruga ahari [www.adobe.com](http://www.adobe.com) kukira okugisha ahari [www.download.com](http://www.download.com) nari ahandi hantu hoona. Omuringo nigwe gumwe oshemereire kwehara okwisha za puroguraamu aha flash drive za banywani baawe nari kuruga ahari EXEfiles ezirkukusindikirwa aha email nari omu butumwa oburikumanya nka instant messaging. Puroguraamu nizibaasa kuhiduka nari zitari z'amazima na kakye n'ahoobwe zirikubaasa kushiisha kompyuta yaawe.

# EBY'OKWERINDA AHABWA DATA EBIKIRWE AHA BYOMA

## Eby'okwerinda omu kukozesa Intaneti omu bicweka bitaano

### OKUKUUMA DATA YAWE EKAGUMA ERIGYE ORIKUKOZESA ENCRYPTION

Baingi omuriitwe nitubiika kandi tutwara obutumwa, ebihandiiko na byona ebirikukwata aha bantu abu turikukoragana nabo hamwe n'ebihandiiko bingi by'omugasho aha laptop, eby'oma ebi turikukozesa kubiika data nangwa n'amasi mu g'omungaro.

Egyo data neeba erimu ebihandiiko by'ekihama ebirikukwata aha murimo gwawe, ekicweka ahu orikutuura, abu orikukoragana nabo hamwe n'okureebuza eby'embeera y'obugabe bw'abantu. Esimu, kompyuta ya laptop, iPad na flash drive nibibaasa kwibwa nari kukopoerorwa omu dakiika budakiika.

Za kompyuta n'amasi mu g'omungaro nibibaasa kusibwa za password, PIN, nari okukozesa obubonero, kwonka ebi ebirikuzesibwa kusiba tibirkubaasa kuyamba omu kurinda data ekyoma kyo kyenyini kyaheza kuhamwa. Nikikira kwanguha ebirikusibisibwa ebi kubiraba aha rubaju, ahabw'okuba data yaawe neeba ebiikirwe omu muringo gurikwanguha kushomwa omu byoma. Eki orikubihamba arikwetenga kukora kyonka n'okuhika ahi bibiikire bwatu (eky'okureeberaho ekyoma ekirikukora nka ibiikiro (hard drive) aha kompyuta yaawe okukita aha kompyuta endijo), kandi aha data neebaasa kukopoerorwa nari kushwijumwa na paasiwaadi yaawe etamanyirwe.

Okukozesa enkora ya encryption kurinda data yaawe, noobaasa kureetera kyagumira abo abarikwiba data okwigura ekyoma kyawé okwiba ebihamma ebiraho. Waakozesa enkora ya encryption, omuzigu waawe tarikwenda ekyoma kyawé kyonka, kureka na paasiwaadi yaawe kwihamu encryption egoy kubaasa kushoma data erikuba ekumirwe ahabw'okuba tihariho ogundi muhanda gutari ogwo. Hariho emihanda mingi y'okukoraramu encryption: Okugikora aha kyoma kyona, fairo nari folder, hamwe n'obutumwa oburikuba nibwohorezibwa (ebiriije kugambwaho omu kicweka ekirikukurataho).

Nigwe muhanda oguhikire kandi ogwanguhi okurinda data yaawe yoona, hatari za folder nkye. Za kompyuta n'amasi mu ga smartphones nigahereza byona, okukora encryption y'ekyoma kyona (nari disk yoona) n'omuhanda oguhikire. Okukora encryption y'ekyoma kyona neehamya kureeba ngu byona ebibiikire aha

Daud naakora na NGO. Esaabiiti nkye ezhingwire bakagiraho okuhenda bakataaha omu ofisi zaabo, ahu kompyuta ez'ahameeza, laptops, cameras, na mobile phones bikaibwa. Endagaano z'okupatana z'ek'ekitongore, ebihandiko by'esente, ebirikukwata ahbu barikukoragana nabo, fairo z'ebi'okucondooza, ebihandiiko ebishohoziibwe ahabw'abantu boona byona bikaibwa.

Za fairo ezibaikwa aha rubaju (Back-ups) zikaba zaabaire zitakozirwe ahari kompyuta zonna ezaabaire ziri omu ofisi. Abeebembezi b'ekitongore kya Daudi bakwasirweho nibebeuuza ebigyendererwa by'abashuma kandi beerarikiriire ngu ebihandiiko by'ekihama ebi baabaire beine bibaasa kuhendera bigiire omu mikono mibi.

Data yaawe okukuburaho nikishaasha ahabwa buri mutu nari ekitongore ahabw'okuba nikiruma omu miringo ebiri: orubaju orumwe, iwe nk'omuntu noofeerwa ebihandiiko by'ekihama ebirikwetengwa ahabw'omurimo gwawe, kandi orubaju orundi omuntu ondijo hati aine ebihandiiko byawe otabahaire rusa.

Daud ashemereire kurwanisa ekizibu eki aha ndengo nyangi. Okurinda ebihandiiko n'omurimo gurikugumizamu kureeba ngu data yaarindwa kureeba ngu omuntu oine paasiwaadi ehikire yaaba niwe yaashoma ekihandiiko ky'enyini. Guma okore kopi z'ebihandiiko eby'okuguma noobiika aha rubaju omu bihandiiko ebiri aha mpapura n'ebitari aha mpapura.

kompyuta nari esimu tibirkubaasa kuhikwa abantu abatiikiriziibwe. Okukora encryption y'ekyoma kyona nikija kurinda ebihandiiko ebihandiikire aha kyoma kandi nikija kwetenga paasiwaadi kuhindura ebihandiikirwe ekyoma kitakabaire kukozesibwa. Eki nikirinda za kompyuta n'amasi mu haagira ngu bagaiba nari bagahamba kifuba.

Esimu za Android niziheereza enkora egi waaza omu byagitiirwemu nk'ebi'okwerinda byayo, kandi n'ebi'oma by'ekika kya Apple nka iPhone na iPad ekitemu nka "okurinda Data" kandi ogiteho egumeho kuguma neeyekozesa waaba ogitireho passcode. Ahari kompyuta erikukozesa Windows Professional neeyetwa BitLocker.

Ahari Macs neeyetwa FileVault. Ahari Linux distributions, enkora erikumanya nka full-disk encryption neekira kuheebwa waabanza waataho enkora yaawe orikurabira omu nkora erikwetwa LUKS. Puroguraamu eziraho ahabwazo nk'eya



Cryptography n'enkora ya sayansi y'okubara erimu okuhandiika n'okushoboorora za code, okuhandiika okurimu okubuzabuza, n'obutumwa bw'ekihama. Encryption n'enkora omu sayansi egi erikukozesibwa kukuuma nari kurinda ebintu ebihandiikirwe – gyete data kugira ngu hatagira omuntu n'omwe otaine paasiwaadi kubaasa kureeba nari kukozesa data egi. Okuruga obunyakare omu hisitore, abantu batwire nibakozesa enkora ya encryption okwohorerezana obutumwa n'amasiko g'okugira ngu tiburikubaasa kushomwa omuntu weena atari ogwo ou bugyendereire kuheebwa.

Erizooba, twine za kompyuta ezirikubaasa kutukorera omurimo gwa encryption. Tekinorogye ya encryption erikukozesibwa omu kukozesa kompyuta na intaneti eyeyongyeire kuruga aha butumwa bw'ekihama obwanguhi bwonka; eky'okureberaho enkora ya encryption neebaasa kukozesibwa ahaw'b'ebigendererwa byingi, nka okurinda ebihandiiko, okushwijuma abahandiiki b'obutumwa, nari ahaw'b'okwigura web otamanyirwe.

Omú mbeera ezimwe, enkora ya encryption neebaasa kuba otomatiki kandi eyanguhi. Kwonka hariho emirundi ei orikwija kwetenga okukora ekirukukiraho okurinda data yaawe. Oku orikukyetyegyereza munonga, nikwe oraije kugira obusingye.

Veracrypt na DiskCryptor nizibaasa kukuhwera kuhika aha bigyendererwa nibyo bimwe.

Okukora encryption ya disk yoona neebaasa kukozesibwa kurinda ebintu ebyanguhi ebirukozesibwa nka external hard disk na flash drives orikukozesa Bitlocker TO GO (Windows), Filevault (Mac) nari Veracrypt (Windows, Mac na Linux)

Obweremwa bukuru bw'okukora encryption y'ekyoma kyona n'okugira ngu nooba nooreebera omu mwanya gumwe gw'obweremwa: haagira ekyabaho okagyemwa kwigura ekyoma, fairo zaawe zonna nizija kuba ziri omu buzibu. Omubazi gw'amaani nookozesa byona okukora encryption y'ekyoma kyona, na fairo na folder encryption ahaw'b'okwenda kusherekwa ebihandiiko byawe by'omugasho munonga ahari buri muntu weena orikubaasa kureeba akauti zaawe aha byoma byawe by'omugasho.

Emihanda y'okukoram encryption ya fairo na folder erikukuyamba kurindira hamwe za fairo nari ebicweka bya kompyuta yaawe. Enkora nungi erikuhwera kukozesa kompyuta z'emiringo mingi (zirikukozesibwa aha Windows, Mac na Linux) ni Veracrypt, eyetongoire nka eitaagi rya porogyekiti ya Truecrypt hati erekirweho etakikozesibwa. Veracrypt neekuyamba kutaho ogundi 'muteeko' gw'ekihama gwa fairo zaawe ekirukora nka USB flash drive kwonka eri omunda ya fairo erikuba ebeire erinzirwe omurundi gumwe aha kompyuta yaawe. Ogundi muringo gwanguhi

kukozesa ni Axcrypt, puroguraamu ya windows zonka erikwongyera enkora ya fairo encryption waakora click y'omukono gwa buryo aha kompyuta yaawe, okukwikiriza kukora encryption ya fairo zaawe zonna ahu orikwendera hatariho kuteganisibwa. Reeba ekishushani ekirikworekwa ahaifo aha kwigura ebirakwegyese ebirukukiraho aha nkora ezi.

Ijuka ngu enkora ya encryption nayo oburungi nari enkora yaayo nink'eya password. Otakaahandiika paasiwaadi yaawe aha kapapura kakwasize aha monitor ya kompyuta yaawe orikugambira omuntu kugira eki yaakoreraho, nari kubiika risiti ya za paasiwaadi omu katabo kaawe k'ebihama. Orikwenda kwiba ebihana byawe yaaba aine ekyoma kyawe, nibabaasa kugyezaho kutaasyamu za paasiwaadi zonna kuhisa obu baraataasyemu eyaawe. Puroguraamu y'okuhenda kwigura kompyuta neebaasa kugyezaho paasiwaadi zirikwingana za million omu kasekendi. Ekyo nikimanyisa ngu pin y'eniyuguta nari enamiba ina neebaasa obutarinda data yaawe kumara obwire buringwa nakakte, kandi hoona na paasiwaadi ndaingwa neebaasa kukyererezaho entaahirizi yaawe kyonka. Paasiwaadi egumire omu mbeera eziraho eshemereire kuba eine eniyuguta zitarengire ikumu n'itaano. Reeba ekicweka ky'eb'y'okwerinda bya za akaanti kumanya ebirukukiraho aha kutaho za paasiwaadi zigumire.

## Puroguraamu n'endagiiriro aha kukora encryption

### Okukora Encryption ya Kompyuta

Bitlocker (Windows) - eriho omu puroguraamu z'ekikugu eza windows 7 na 8, hamwe na puroguraamu nyungi za windows eza 8.1 n'okweyongyera ahaiguru. Endagiiriro erikwanguha<sup>23</sup> kukozesibwa eri aha HowToGreek otiireho endijo ahari windows Central okukira munoga Windows 10<sup>24</sup>. Kimanye ngu Bitlocker burijjo neeyetaaga ekindi kyoma kirikwetwa TPM ekirikukira kuba kiri omu kompyuta za za bizinensi z'ekika ky'ahaiguru. Endagiiriro zombi ezirkworekwa aha zirimu endagiriro oku orikutaho Bitlocker omuri za kompyuta hatariho ekyoma kya TPM.

FileVault (Mac) - okukora encryption y'ekyoma kyona eyanguhi kutaho aha kika kya kompyuta za Mac enyingi. Kuratirira endagiiriro za Apple okutamu Filevault kurugiirira aha nkora ei orikukunda<sup>25</sup>.

DiskCryptor (Windows)<sup>26</sup> - shoma endagiiriro kuruga omu ba Electronic Frontier Foundation aha puroguraamu ya DiskCryptor full-drive encryption eya Windows<sup>27</sup>.

Veracrypt<sup>28</sup> (Windows, Mac, Linux) - puroguraamu erikubaasa kurinda ebicweka by'ekyoma kyawe nari ebicwekacweka byona n'ezindi ezitakwihwamu zikabiikwa aha rubaju. Endagiiriro aha by'okwerinda eri omu kabokisi ninungi munonga<sup>29</sup>.

### Okukora Encryption y'esimu

#### Android Phone Encryption - shoma endagiiriro kuruga aha HowToGreek<sup>30</sup>

iPhone na ipad Encryption - kyanguhi okutaho pascode kusiba ekyoma kyawe nikija kuba encrypted. Yega ebirukiraho kuruga aha ndagiiriro y'aba Electronic Frontier Foundation.<sup>31</sup>

#### Ebyoma ebirukozesibwa aha kompyuta

BitLicker To Go (Windows) - kora encryption y'ebyoma ebirukozesibwa aha kompyuta nka external hard drives na flash drives na BitLocker To Go<sup>32</sup>.

Filevault (Mac) - kora encryption y'ebyoma ebirukozesibwa ahari kompyuta nka external drives na flash drives orikukora click aha mukono gwa buryo otoorane ekigambo encrypt, reero otoorane password. Reeba endagiiriro kuruga omu ba Apple<sup>33</sup>.

Ijuka ngu enkora ezaagambwa kukozesibwa aha byoma ebyayorekwa aha ruguru nizija kubireetera kukozesibwa ahari kompyuta za Macs na Windows zonka. Veracrypt egi yo neeheereza omugisha gw'okukora aha byoma ebendi ebirukozesibwa aha kompyuta ebirinzirwe n'enkora ya encryption.

23 ow-ToGeek,Howto setsetupbitlocker encryptionon windowshttp://www.howtogeek.com/192894/how-to-set-up-bitlock- er-encryption-on-windows/,Accessedonthe 8thFebruary2017

24 WindowsCentral,Howtousebitlockerencryptionon windows10,http://www.windowscentral.com/how-use-bitlocker-en- cryption-windows-10, Accessedonthe8thFebruary2017

25 Apple,UseFileVaulttoencrypttheshutdown diskonyour mac,https://support.apple.com/en-us/HT204837,Accessedonthe8thFebruary2017

26 https://diskcryptor.net/

27 ElectronicFrontierFoundation,Howto:Encryptyour windowsdevice,https://ssd.eff.org/en/module/how-encrypt-your- windows-device,Accessedonthe8thFebrua ry2017

28 VeraCrypt,Projectdescription,https://veracrypt.code- plex.com/,Accessedonthe8thFebruary2017

29 Securityinabox,Veracrypt:Securefilestorage, https://securityinabox.org/en/guide/veracrypt/windows,Accessedonthe8thFebruaury2017

30 How-ToGeek,Howtorecryptyourandroid phonehttp:// www.howtogeek.com/141953/how-to-encrypt-your-android-phone- and-why-you-might-want-to/,Accessedon the8thFebruary2017

31 Apple,Howtoencryptyour iphone,https://ssd.eff.org/en/module/how-encrypt-your-iphone,Accessedonthe28thApril2016

32 Microsoft,EnablebitlockeronaUSBFlashdrivetopro- tectdata,https://technet.microsoft.com/en-us/magazine/ff404223. aspx,

33 Apple,OSXEICapitan: Encryptremovable disksome- dia,https://support.apple.com/kb/PH21791?locale=en\_US,Accessed onthe8thFebruary2017



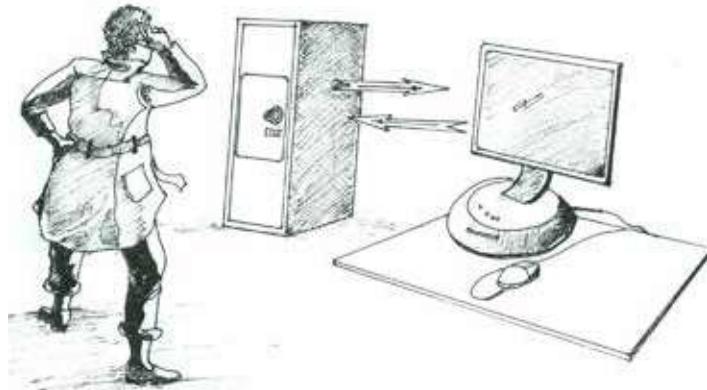
## OKUKORA KANDI OKABIKA KOPI ZA DATA YAWE

Okurindwa gye kw'ebihandiiko nikyongyera kimanyisa kubaasa kukozesa data yaawe ahu orikugyendera hoona. Ni buzibu ki oburikuba aha bihandiiko byawe ahu birikuba buri? Okwiba kompyuta zaawe omu myanya eya boona nari ey'okwehereera nibwe buzibu burikukira kubaho, kwonka nabwe ebintu ebirimu za virus, okusiikara kwa kompyuta, omuriro, okushiishwa amaizi, nari ebyoma ebirukukozesibwa kuremwa kukora byona nibireeta okufeerwa data. Okumaraho ekizibu eki nooteekwa kuguma noobiika kopi za fairo zaawe.

Kopi za fairo nizikira kubiikwa aha byoma ebirukukozesibwa ahari kompyuta ebirkumanywa nka external hard drives, USB drives, na removable disks nka CDs na DVDs. Ijuka ngu ebi ebirukukozesibwa omu kubiika data biri omu kabi k'okwibwa n'okureebwa abantu abatarkwetengyesa, n'ahabwekyo kopi za data yaawe nazo zishemereire kurindwa. Reeba omu kicweka eky'aharuguru aha risiti y'ebirikworeka oyegy eyoku ebirukukozesibwa kubiika data birikuumwa.

Okukora n'okubiika kopiz'ebihandiikonari data yaawe nikibaasa kwanguha obumwe orikupoorora folder zaawe ez'orikukoreramu okaziiha aha kompyuta okazita ahanti nk'aha external hard drive. Kwonka nabwe hariho enkora nyingi z'okukuyamba kukora n'okubiika kopi za data yaawe. Waaba nookozesa<sup>34</sup> puroguraamu za windows zo ziine emiringo ebiri eyombekiirwe omunda (etari mu bika ebindi): Ei barikweta backup and restore. Neekora za kopi omu sisitimu yoona ahu<sup>35</sup> orikubaasa kugaruka okabona data yaawe kyabaho ekasanguka nari ekakuburaho, okwongyera ahari eki, noobaasa kutaho enkora y'okukora n'okubiika kopi za data yaawe omu bwijwire; endijo ni File History erikwija kubiika kopi z'ebihandiiko nk'oku birikuguma<sup>36</sup> nibihinduka omu mwanya gw'obwire buringwa. Mac OS X nayo eine sisitimu ekoreire omunda erikwetwa Time Machine erikuguma neekora kandi ekabiika erikwongyesereza ahari za fairo aha kyoma ky'okubiikwaho ekiritirwe ahari kompyuta (external hard drive), eki orikubaasa kusharaho kutamu encryption waaba noogita omu kompyuta omu kutandika.

Noobaasa kukozesa puroguraamu za busha eza intaneti ezirikukira kumanywa n'eya DropBox, Google Drive, Copy, na OneDrive. Waaba nooyerarikira oku kopi z'ebihandiiko byawe biraagume bibiikirwe omu kihama zitarikureebwa abarikukuheereza obuheereza bwa intaneti (nka Google, Microsoft, DropBox) oshemereire kureeba ahari puroguraamu z'okukozesa kukubiikira kopi za fairo zaawe ezirikukuma fairo zaawe aha kompyuta yaawe okakozesa encryption zitakatiirwe aha mukutu gw'orikukuha obuheereza bwa intaneti: Reeba Mega, Sync.com, SpiderOak na Wuala.



Hariho na puroguraamu erikwija kukora encryption aha fairo yaawe omwanya gwawe reero fairo ezaaruga omunkora ya encryption zikateebwa omu Dropbox n'ezindi puroguraamu za intaneti ezirikuheereza obuheereza bw'okukora n'okubiika kopi za fairo: Reeba BoxCryptor,<sup>37</sup> Duplicati<sup>38</sup> na Viivo<sup>39</sup>.

34 Microsoft, Back and Restore your PC, <https://support.microsoft.com/en-us/help/17127/windows-back-up-restore>, Accessed on 8th February 2017

35 Microsoft, File history in Windows, <https://support.microsoft.com/en-us/help/17128/windows-8-file-history>, Accessed on the 9th February, 2017

36 Apple, Time Machine, [Time Machine](https://support.apple.com/en-us/HT201250), Accessed on the 9th February, 2017

37 N'eky'omuhendo ukukozesa emiringo ebiri - omu mwanya gwawe n'okukorwa abarikukuheereza obuheereza bwa intaneti ahaw'okukora n'okubiika kopi za fairo zaawe.

38 Duplicati, Free backup software to store encrypted backups online for Windows, macOS and Linux, [www.duplicati.com](http://www.duplicati.com), Accessed on 9th February 2017

39 Viivo, Encrypt your files before they sync to Dropbox, Box, Google Drive, <https://viivo.com/>, Accessed on the 9th February 2017

# EBY'OKWERINDA BYA DATA ERIKUTAMBUZIBWA ERIKURABIRA OMURI ZA NETIWAAKA

Eby'okwerinda by'enkora ya Intaneti omu bicweka bitaano

## OKU INTANETI ERIKUKORA

Intaneti ni netiwaaka ya za netiwaaka ezindi erikuheereza obuheereza bw'okuhaanisa obutumwa ahagati ya kompyuta ya kasitoma na za saava (servers) za netiwaaka ezo. Kompyuta za kasitoma n'ebyma ebi orikukozesa; nibishaba obutumwa nari obuheereza oburi nari obubiikire aha kompyuta za saava. Kasitooma na kompyuta ya saava nibikozesa amateeka nari entwaza erikuragiirwa (nka orurimi orurikukozesibwa orurikwetegyerezibwa embaju zombi) nka Hypertext Transfer Protocol (HTTP) ahabw'ebirikushabwa/kubuuzibwa n'ebirikugarukwamu ahagati yaazo. Obutumwa bwona oburikurabira ahari HTTP protocol nibutambura aha intaneti yoona nka nk'ebigambo by'enkuute: Omuntu weena oine omwanya gurikumuha omugisha omu bya netiwaaka (orikuheereza obuheereza bwa intaneti, orikwebembera bizinensi ya cyber/internet cafe, nari omwe aha magana n'amagana aha myanya ya intaneti erikurabwamu obutumwa abaasa kubukwata nari kubukoramu kopi.

Nk'oku orikubaasa kureeba ekishushani ekiri aha peegi 45, hariho za kompyuta ezindi nyingi eziri omu mwanya kunywanisa orikukozesa intaneti na saava ei arikwenda. Aha mikutu eteineho buhame bw'ebi'okwerinda ezo kompyuta ezindi nizibaasa kushoma nari n'okuhindura obutumwa bw'orikugyezaho kukora empurizagana.

Eky'omugisha murungi, hariho emikutu eriho kutuhwera kukuma data n'empurizagana byaitu byaba nibiraba aha intaneti. Kwonka, nituteekwa kwetegyereza niyo eha kandi neekozesa ki omu nkora yaayo.

## OKUKORA EMPURIZAGANA N'ABANDI

Ebitongore by'amasimu hamwe na intaneti byanguhize empurizagana n'abandi bantu kukira nk'oku byabaire

Geraldina n'omurwanirizi w'obugabe bw'abantu ahabw'embeera y'obuhangwa. Akaba aine puraani y'okugira orukiiko rw'okushomesa abantu boona omu kicweka kye kubamanyisa aha ki gavumenti yaabaire neeyenda kukora kuheereza ekibira ba invesita nari abakusiga esente abarikuruga aheeru. Akahandiikira abeebembezi b'ekyanga boona email, arikubagambira kumanyisa abantu boona aha kiro ky'okwezi n'omwanya gw'orukiiko. Ebiro bikye orukiiko kuhika, akagwerwa akagwe okumanya ngu tihariho n'omwe aha beebebezi b'ekyanga owaatungire email ye.

Ebiro bikye ebyakurataireho, akataayaayirwa pooriisi eyaamurabwire okurekyera aho okuhemba omuriro omu bantu n'okurwanisa puroguraamu za gavumenti. Akasigara naayebuuza ekyabaire aha email ye n'oku pooriisi yaatungire obutumwa obwabaire buri omu email ye omu mwanya gw'abantu abaabaire bashemerire kugitunga.

Ekyabaire ahari Geraldina nkyetwa okureebuuzibwa. Nikibaho ahu omuntu arikubaasa kureebuuza empurizigana ez'orikukora ahabw'okuba nikikorwa omu bigambo ebiri rwatu aha intaneti.

Geraldina naabaasa kukozesa encryption nka HTTPS, GPG na VPNs kukuma obutumwa bwe nk'ekihama kandi buri obw'omubonano ahabw'okwenda ngu burekye kukozesibwa kumutiinatiinisa yaaba naakora omurimo gwe.

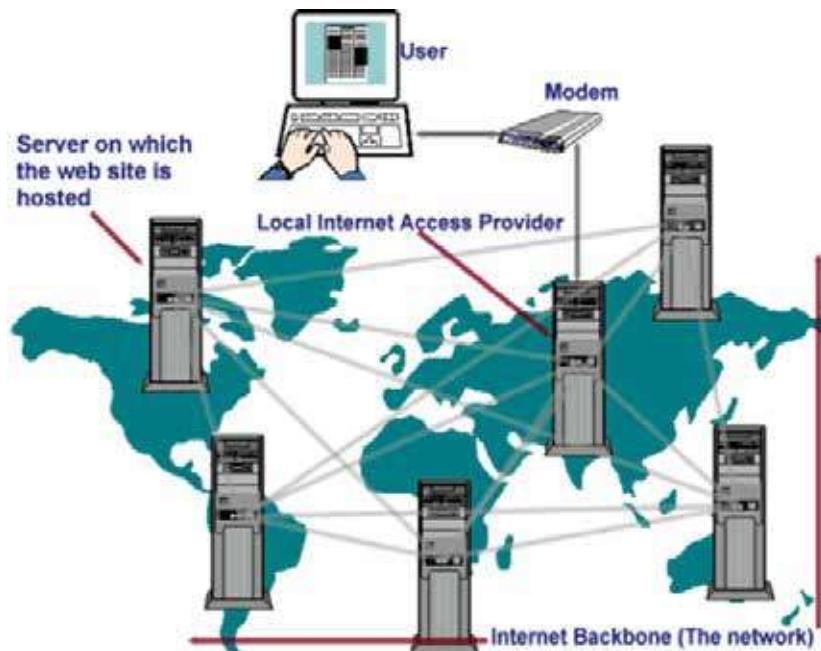
byarabaireho, kwonka nabwe bikozire okureebuuzibwa kwabaho munonga nk'oku kyabaire kyarabeireho kuruga okuhangwa kw'omuntu. Waaba otazigire eki waakora kurinda ebihama byawe, buri simu ei orikuteera, mesegi ei orikusindika, email, okuhanisana obutumwa ahonaaho, obutumwa bw'amaraka



bw'orikusindika, za video chat hamwe n'obutumwa bw'aha social media byona nibibaasa kugira obuzibu bw'okureebwa nari kuhurirwa abandi otakimanyire.

Burijo omuhanda murungi gw'empurizagana ogutaine buzibu n'okugamba n'omuntu maisho aha gandi, hatariho kukozesa za kompyuta nari amasimu na kakye konna. Ahabw'okugira ngu eki burijo tikirikukira

kubaho, ekirikukurataho ekirikukira oburungi n'eki barikweta end-to end encryption (ahu obutumwa burikushomwa abantu babiri bonka – orikubwohereza n'orikubwakiira) mwaba nimukozesa empurizana y'aha intaneti waaba nooyenda kukuuma obutumwa bwawe.



A simple illustration of how the Internet works would be some one accessing a news website to read news.

#### **Enkora ya end-to-end encryption neekora eta?**

Ebitongore by'amasimu hamwe na intaneti byanguhize empurazigana n'abandi bantu kukira nk'oku kyabaire kyarabiireho, kwonka nabwe bikozire okureebuuzibwa kwabaho munonga nk'oku kyabaire kyarabiireho kuruga okuhangwa kw'omuntu. Waaba otagizire eki waakora kurinda ebihama byawe, buri simu ei orikuteera, mesegi ei orikusindika, email, okuhaanisana obutumwa ahonaaho, obutumwa bw'amaraka obu orikusindika, za video chat hamwe n'obutumwa bw'aha social media byona nibibaasa kugira obuzibu bw'okureebwa nari kuhurirwa abandi otakimanyire.

Burijo omuhanda murungi gw'empurazigana ogutaine buzibu n'okugamba n'omuntu maisho aha gandi, hatariho kukozesa za kompyuta nari amasimu na kakye konna. Ahabw'okugira ngu eki burijo tikirikukira kubaho, ekirikukurataho ekirikukira oburungi eki

barikweta end-to end encryption (ahu obutumwa burikushomwa abantu babiri bonka – orikubwohereza n'orikubwakiira) mwaba nimukozesa empurizana y'aha intaneti waaba nooyenda kukuuma obutumwa bwawe.

Om u mazima abantu babiri baaba nibenda kwohorerezana obutumwa (eky'okureeberaho, Kamau na Abuya) buri omwe naateekwa kukora ezi barikweta cryptographic keys. Kamau atakohoreize Abuya obutumwa, naabuta omu encryption ahabwa Abuya ahabw'okwenda ngu ku buraahikye owa Abuya abwihemu. Bwanyima nawe ayohoreze obutumwa obwo oburi omu encryption kurabira aha intaneti. Omuntu weena ku yaakuba ariyo naareeba nari nahurikiza bushuma obutumwa obu Kamau na Abuya barikuhererezana —n'obu baakuba barikubaasa kuhika nari kukozesa obuheereza obu Kamau arikukozesa kwohereza obutumwa (nka akaanti ya email ye)—nibeija kureeba data eri encrypted kwonka tibarikwija

kubaasa kushoma obutumwa. Abuya ku arikubutunga, enamba ye nari code okubwigura bukaza omu muringo gw'okushomwa.

Enkora ya End-to-end encryption neeyendamu amaani, kwonka nigwe muhanda gwonka ogu abarikugikozesa barikubaasa kushwijuma eby'okwerinda kw'obutumwa bwabo obu barikwohoreza n'okwakiira batabaasize kwsiga omukutu gw'empurizana ogu bombi barikukozesa.<sup>40</sup>

Obuheereza obumwe nk'obwa Skype, nibworeka kuba<sup>40</sup> nibukozesa enkora ya end-to-end encryption n'obu kirikureebeka nk'ekitari kityo. Ahabw'enkora ya end-to-end encryption kuba etaine buzibu, abarikugikozesa nibateekwa kuba nibabaasa kushwijuma bakamanya ngu za code (crypto keys) ezi barikukozesa omu butumwa kuba ziri ez'abantu abu barikuteekateeka ngu n'ezaboo. Puroguraamu erikuba neekozesibwa omu mpurizana yaaba etaine kubaasa oku kukoreirwemu, nikiba nikimanyisa ngu buri nkora ya encryption ei erikubaasa kuba neekozesa neebaasa kureebwa ogwo orikuheereza obuheereza obwo we wenka, eky'okureeberaho nka gavumenti ku yaakubagyema kukikora.

### Obutumwa obw'okugamba omu maraka

Ku orikuteera esimu orikukozesa esimu ey'aha meeza (landline) nari ey'omungaro (mobile phone), okwohoreza obutumwa kwawetikuri munkora eya end-to-end encryption. Waaba nookozesa esimu yaawe y'omungaro, obutumwa bwawe obu orikwohoreza bubaasa kuba buri encrypted kwonka omu muringo gutarikumara ahagati y'esimu yaawe hamwe n'omurongooti gw'esimu eriho. Kwonka ekigaaniiro kyawe kyaba nikigyenda omumaisho kurabira omu netiwaaka y'esimu, neeba eri omu kabi k'okuhurirwa ekitongore kyawe ky'esimu nangwa n'okwongyeraho na buri kitongore kya gavumenti ekiine obushoboorozi aha kitongore kyawe ky'esimu. Omuhanda ogwanguhu kureeba ngu oine enkora ya end-to-end encryption aha kigaaniiro kyawe ky'amaraka aha simu n'okureeba ngu ah'obwe waakozesa VoIP.

Yegyendesereze! VoIP (Voice over Internet Protocol) enyingi ezirikukira kukozesibwa abarikuheereza obuhereza obwo nka Skype na Google Hangouts, nibakozesa enkora ya encryption omu kutambuza

obutumwa bwawe kugira ngu abarikwenda kuhurikiza omu butumwa bwawe bushuma batabaasa kukikora, kwonka aba abarikuheereza obuheereza obu bo bonka nabo nibabaasa kubuhurikiza. Kurugiirira ahu oku obuzibu bwawe burikuba buri, eki nikibaasa kuba ekizibu nari kibaasa kutakubeera kizibu.



Eky'omugasho munonga kukuherwa kusharamu yaaba omuringo ogu orikukozesa kwohoreza obutumwa bwawe kirikuhuherewe obusingye n'okukuuma ebihama byawe n'enkora y'aba Electronic Frontier Foundation erikumanywa nka Secure Messaging Scorecard.<sup>41</sup>

Bumwe aha buheereza oburikuheereza enkora ya end-to-end encrypted VoIP omu kuteera esimu harimu:

- Ostel
- Silent Phone<sup>42</sup>
- Signal<sup>43</sup>

Omuri ezi Signal niyo erikukizayo kukozesibwa kandi nitukuhabura enkozesia yaayo. Okwenda kugira ebigaaniiro ahari end-to-end encrypted VoIP, embaju zombi nibateekwa kuba nibakozesa puroguraamu niyo emwe nari zirikukorangana.

### Obutumwa bw'ebihandiiko bigufu n'obutumwa oburikwohorezbwa ahonaaho

Obutumwa bw'ebihandiiko bigufu obwa burijo (SMS) tiburukozesa enkora ya end-to-end encryption. Waaba nooyenda kwohoreza obutumwa obukuumirwe n'enkora ya encryption aha simu yaawe, gyezaho okuteekateeka aha puroguraamu y'obutumwa oburi encrypted obw'okusindika ahonaaho omu mwanya

40 Skype,Whatisthecloud,<https://support.skype.com/en/faq/fa10983/what-are-p2p-communications>,Accessed on the 9th February 2017

41 ElectronicFrontierFoundation,Securemessagingscore-card,<https://www.eff.org/secure-messaging-scorecard>,Accessed on 9th February 2017 com/services#mobile,Accessed on 9th February 2017

42 SilentCircle,Silentmananger,<https://www.silentcircle>.

43 ElectronicFrontierFoundation,HowtouseSignalonIOS,<https://ssd.eff.org/en/module/how-use-signal-ios>,Accessed on 9th February 2017

gw'obutumwa obwa burijo. Obwa hati omuringo gwonka gw'okwohoreza obutumwa buhandiikirwe omu bugufu (SMS) obukuumirwe n'enkora ya encryption n'okukozesa puroguraamu ya Silenceapp<sup>44</sup> eya Android, obwakare

Endijo miringo y'okusindika obutumwa neekorera aha intaneti. N'ahabwekyo eky'okureeberaho abarikukozesa Android na iOS nibabaasa kukora za chat hatariho buzibu barikukozesa omurongooti (signal)<sup>45</sup>.

Omuringo ogwa Off the Record (OTR) n'omukutu ogrikukozesa enkoraya end-to-end sup encryption ahu orikwohoreza obutumwa ahonaaho ow'orikwohereza akabureeba okiriyo noobuhandiika ekigaaniro kikagumizamu ahaiguru y'obundi buheereza.

Bimwe aha birikukozesibwa ebirikukoragana na OTR omu kwohoreza obutumwa bw'ahonaaho harimu:

- Pidgin<sup>46</sup> (ahabwa windows na Linux)
- Adium<sup>47</sup> (ahabwa OSX)
- Chat Secure<sup>48</sup> (ahabwa iphone na Android)
- Jitsi<sup>49</sup> (ahabwa windows, Linux, na OSX)
- Jutsi Meet<sup>50</sup> (ahabw'okwenda kugira video conference omu Web Browser yaawe eteine buzibu)

## Email

Abaingi abarikuheereza obuheereza bwa email nibakuheereza omuhanda gw'okukozesa email yaawe orikukozesa web browser, nka Firefox nari Chrome. Ahari aba abarikuheereza obuheereza obu, abaingi ahari aba nibaheereza obushagiki bwa HTTPS, nari encryption y'okurinda email yaawe omu kugitambuza. Noobaasa kukimanya ngu orikukuheereza obuheereza bwa email naagiha oburinzi bwa HTTPS waaba nooyigura omu webmail yaawe na URL ahaiguru ya browser yaawe neetandika n'enyuguta ezi: HTTPS omu mwanya gwa: HTTP (eky'okureeberaho: <https://mail.google.com>).



Orikukuheereza obuheereza bwa email yaaba aine obuheereza oburikushagikwa HTTPS, kwonka iwe otakabutungire kwonka, gyezaho kuhindura HTTP na HTTPS omuri URL reero peegi egoy ogitandike busya. Waaba nooyenda kureeba ngu burijo nookozesa HTTPS aha mikutu ei erikuba eriho,

Buri hamwe ahu orikwigura taho HTTPS ogyongyereho ahabwa<sup>51</sup> Firefox nari Chrome.

Bamwe aha barikuheereza obuheereza bwa webmail abarikukozesa HTTPS ahabw'okugira ngu tihari ekirkukizibira harimu:<sup>52</sup>

- Gmail
- Riseup
- Yahoo

Bamwe aha barikuheereza obuheereza bwa webmail abarikuheereza omugisha gw'okutoorana kukozesa HTTPS ahabw'okugira ngu tihari ekirkukizibira orikugiiha omu settings za kompyuta. Obuheereza oburikukira kukozesibwa munonga ahu ekyo kirikukorwa ni Hotmail.

**Enkora y'okurinda data yaaba neetambuzibwa (Transport-layer encryption) neekora ki kandi n'ahabwaki orikubaasa kugyetenga?**

HTTPS, nabwe erikukira kumanya nka SSL nari TLS, neekuma obutumwa bwawe okugira ngu butabaasa kushomwa abandi bantu abari aha netiwaaka yaawe. Eki nikibaasa kubamu abandi bantu abarikukozesa Wi-Fi niyo emwe omu kishaayi ky'enyonji, nari ahari café, abandi bantu n'abari omu ofisi yaawe nari aha ishomero ryawe, abarikureeberera ISP yaawe, abany'eitima abarikuhenda bakaigura kompyuta kifuba, za gavumenti, nari abarikukwatisa amateeka. Obutumwa oburikwohorezbwa aha web browser yaawe, harimu na za web pages ezi orikutaayaayira hamwe n'obutumwa oburi omu email zaawe, blog posts, na messages, orikukozesa HTTP omu mwanya gwa HTTPS ebyo ni busha ahari ogwo orikuza omu kompyuta yaawe akaiba obutumwa

44 Silence, NeedsomePrivacy,<https://silence.im/>, Accessed on 9th February

45 Electronic Frontier Foundation, Howto:useSignal on IOS, <https://ssd.eff.org/en/node/61/>, Accessed on 9th February 2017

46 Electronic Frontier Foundation, Howto:UseOTRforwin- down, <https://ssd.eff.org/en/module/how-use-otr-windows>, Accessed on 9th February 2017

47 Electronic Frontier Foundation, Howto:Use the OTR for MAC, <https://ssd.eff.org/en/module/how-use-otr-mac>, Accessed on 9th February 2017

48 Electronic Frontier Foundation, Howto: Install and use ChatSecure, <https://ssd.eff.org/en/module/how-install-and-use-chatsecure>, Accessed on 9th February 2017

49 Jitsi, Opensource videocalls, <https://jitsi.org/>, Accessed on 9th February 2017

50 Jitsi, Jitsimeet, <https://jitsi.org/Projects/jitsiMeet>, Accessed on 9th February 2017

51 Electronic Frontier Foundation, https everywhere, <https://www.eff.org/https-everywhere>, Accessed on 9th February 2017

52 Electronic Frontier Foundation, httpseverywhere, <https://www.eff.org/https-everywhere>, Accessed on 9th February 2017

bwawe akabushoma. HTTPS niyo nkuru munonga kandi eyanguhi omu kurinda data omu kwigura za web browser el turikuhabura kukozesibwa ahabwa buri omwe. N'ekintu kikuru nk'okusiba orukoba omu motoka waaba noovuga.

Abany'eitima abarikuruga omuri za gavumenti n'abarikuruga aheeru ya gavumenti nibbeeyongyera kugira obumanyi aha kwiba HTTPS obutumwa oburi omu kutambura ahagati ya kompyuta na saava. Omu muringo ogu nibabaasa kukozesa ahari browser na SSL satifketi y'ekikwangara ya saava ey'orikwenda kandi waayesiza okurabura okurikuheebwa byona ebi orikukora n'obutumwa obu orikwohereza ahagati ya kompyuta na saava nibwija kwatwamu buteganisibwe

.Om u mbeera nk'ezo ni kikuru munonga obutagumizamu n'okwohereza obutumwa kwihihao kyaba nikikorerwa omumwanya ogu oine orusa oruhamiibwe. Burijo nikihaburwa kurindaho kumara akaire reero obone kugaruka kugyezaho kugaruka kwigura omukutu bwanyima waaba oheire okurabura nk'oku kiri omu kishushani ekiri ahaiguru.

### Okwerinda kw'omutindo gw'ahaiguru ahabwa EmailSecurity (GPG/PGP)

Hariho ebintu ebi HTTPS etarikukora. Ku orikusindika email orikukozesa HTTPS, orikukuheereza obuheereza bwa email nabwe naatunga kopi y'obutumwa bwawe etari encrypted (etarinziwe). Za gavumenti n'abarikukwasa amateeka nibabaasa kureeba data yaawe n'orusa rwa kooti (warrant). Omuri America, abarikuheereza obuheereza bwa email beine enkora erikugira ngu nibajia kukugambira waagira okushabwa gavumenti kuheerezayo data yaawe ei orikukozesa kasita baba barikwikirizibwa amateeka kukikora, kwonka enkora ezi nizikihamisiriza ngu nikikorwa okyeyendeire, kandi omu bwire obwingi abarikuheereza obuheereza bwa email nibaragiirwa omu mateeka obutamanyisa abarikukozesa obuheereza bwabo ku hariho abarikushaba kuheebwa data yaabo.

Bamwe aha abarikuheereza obuheereza bwa email nka

Google<sup>53</sup>, Yahoo<sup>54</sup>,na Microsoft<sup>55</sup>, nibashohoza za ripoota z'okworeka okukorera aha mazima

53 ahoo, Transparency Report overview, <https://transpar-ency.yahoo.com/>, Accessed on the 9th February 2017

54 Microsoft, Our commitment to transparency, <https://www.microsoft.com/about/corporatecitizenship/en-us/reporting/transparency/>, Accessed on the 9th February 2017

55 ahoo, Transparency Report overview, <https://transpar-ency.yahoo.com/>, Accessed on the 9th February 2017

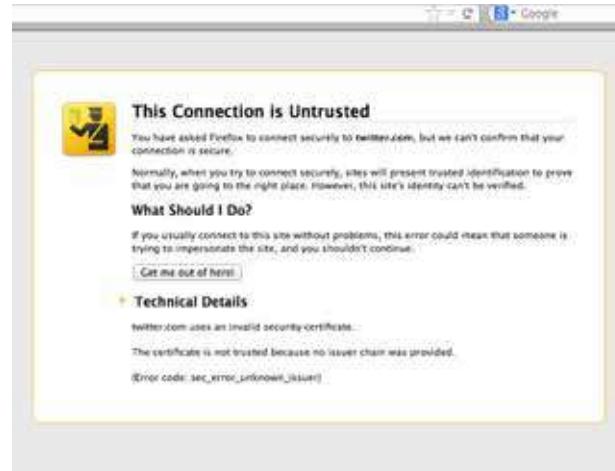
56 Electronic Frontier Foundation, How to: Use PGP for MACOSX, <https://ssd.eff.org/en/module/how-use-pgp-mac-os-x>, Accessed on the 9th February 2017

57 Electronic Frontier Foundation, How to: Use PGP for Linux <https://ssd.eff.org/en/module/how-use-pgp-linux>, Accessed on the 9th February 2017

58 Mailvelope, <https://www.mailvelope.com/>, Accessed on the 9th February 2017

59 ProtonMail, Secure Email, <https://protonmail.com/>, Accessed on the 9th February 2017

n'oburingaaniza, barikworeka emirundi ei gavumenti ebasabire data za ba kasitoma baabo, mahanga ki agarikukora okushaba okwo kandi n'emirundi engahi obu kampuni eikiriize okuhayo data.



Okutiinatinisibwa kwabe kwaba kurimu aba gavumenti nari abarikukwatisa amateeka, nari waaba oine endiijo nshonga kugira ngu orikukuheereza obuheereza bwa email atabaasa kuheereza ebiri omu email zaawe tizaheebwa abandi bantu, noobaasa kwenda kukozesa enkora ya end-to-end encryption aahabw'okurinda obutumwa oburi omu email zaawe.

Ei barikweta PGP (nari Pretty Good Privacy) niyo nkora eyanguhi ahabw'enkora ya end-to-end encryption ya email yaawe. Yaaba ekozesiibwe kurungi, neeheereza obukumi bw'amaani munonga ahabw'obutumwa bwawe n'empurizagana ezi orikukora. PGP neegaruka emanya nka GPG (Gnu Privacy Guard).

Okumaya bingi ebirikukwata aha ku orikutamu n'okukozesa PGP/GPG encryption ahabwa email yaawe orikukozesa erikwetwa email clients aha kompyuta yaawe, reeba endagiiriro ezi ahabwa Mac OSX, Windows<sup>56</sup>, na Linux<sup>57</sup>.

Okukozesa PGP/GPG omu webbrowser yaawe, reeba ahaky'okukozesa Mailvelope<sup>58</sup> browserplugin nari oronde puroguraamu etebeekanisiibwegye eya webmail clients nka ProtonMail.<sup>59</sup>

Omuri PGP buri omwe naataho ekirukozesibwa omu kwerinda omu bicweka bibiri: eky'okukozesa omu kihama n'eky'okukozesa ahari abandi bantu. Nookuma kurungi munonga ebicweka eby'ekihama aha byoma byawe, kwonka ebicweka ebirukozesibwa ahari abandi bantu n'obiheereza ahari buri omwe ou orikuhrira nooyenda kuhurizana nawe orikozesa PGP. Okuyamba omu kushoboorora enkora za PGP, ei barikweta Tactical Technology Collective eine za video z'enkuratane zirkushoboororagy'e zirkwetwa Decrypting Encryption.<sup>60</sup>

### **Ebi enkora ya end-to-end encryption etarikukora**

Enkora ya End-to-end encryption neerinda ebiri omu butumwa bwawe, kwoka gatari mazima nari obuhame oburi omu butumwa obwo. Terikurinda obutumwa bwawe oburikushoboorora ahabi orikuba nooyohoreza – oburikumanya ekindi kintu harimu n'omutwe mukuru gwa email yaawe, nari oha ou orikwohorereza obutumwa kandi ryari.

Obutumwa oburikushoboorora aha data yaawe nibubaasa kuheereza amakuru agarikushoboorora kurungi n'obu ebiri omu butumwa burikuguma buri ekihama.

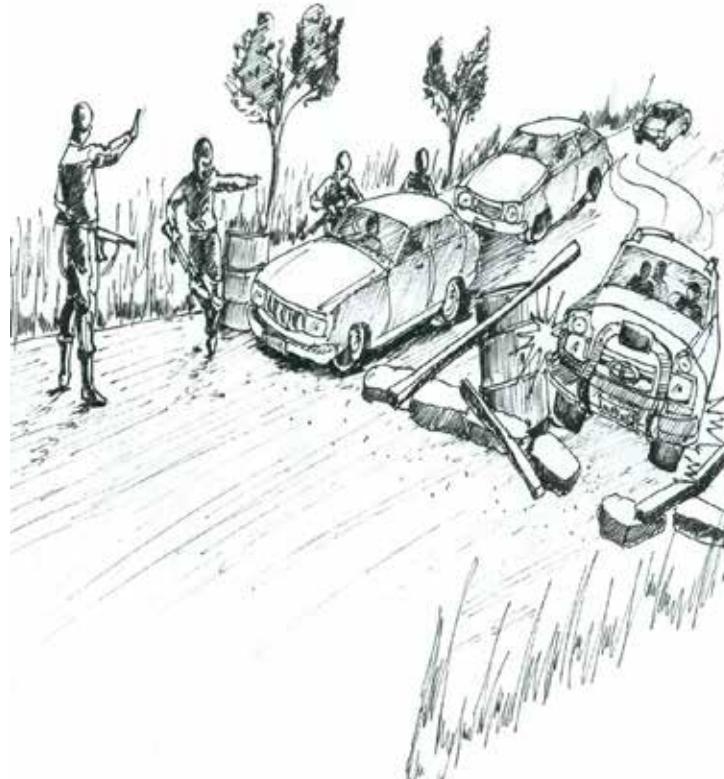
Obutumwa oburikushoboorora ahab'orikuteerera esimu nibubaasa kuhayo eby'omunda munonga kandi by'omugasho. Eky'okureeberaho:

- Nibamanya ngu okateerera orikuheereza obuheereza bw'okuhuumuriza abari omu kainamo kaangi ahari shaaha 2:24am z'ekiro mwagambira edakiika 18, kwonka batarikumanya eki mwagambireho.
- Nibamanya ngu okateera esimu omu radio y'omukyanga omu bwire bw'eshaaha y'okugaaniira aha nshonga z'eb'yobutegyeki, kwonka ebi waagambire omu kuteera esimu byenyini biguma biri ekihama.
- Nibamanya ngu okagamba n'omwanya gw'obuheereza bwa busha aha by'akakooko siriimu, nabwanyima n'omushaho waawe, nabwanyima na kampuni y'obuheereza bwa inshwarensi omu shaaha niyo emwe, kwonka tibarikumanya ebi mwagaaniireho.
- Nibamanya ngu okateererwa esimu kuruga omu ofiisi nkuru z'ekibiina ky'eb'yobutegyeki ekihakani obu kyabaire kyaine kampeyini aha kiragiyo

ky'eb'yamahurile, kandi bwanyima waateerera boosi waawe ahonaaho, kwonka ebyagambirwe omu simu ezaateirwe zonna bikaguma birinzirwe obutataahirirwa gavumenti.

- Nibamanya ngu okateerera esimu omushaho w'enshonga z'abakazi, mwagambira ekicweka ky'eshaaha, reero bwanyima omu izooba eryo waateere enamba y'ab'okubariirira oruzaaro (family planning), kwonka tihariho n'omwe weena orikumanya eki mwagambireho.

Waaba nooteeza esimu ey'omungaro, ebirukuwata ahu orikuba ori nibabyeta metadata. Omu mwaka 2009, Ow'eb'yobutegyeki w'ekigombe kya Green Party omuri German orikwetwa Malte Spitz akahababira ekitongore ky'amasimu eky'a Deutsche Telekom kubagyema ebirukuwata aha simu ye eby'obwire<sup>61</sup> bw'ameezi mukaaga, ebi yaahaire orupapura rw'amahurile omuri German. Ekyarugiremu ekyareebirwe kikooreka omu bwijwire byona ebirukuwata aha ntambura za Spitz. Spitz akaheereza sipiiki nungi y'amaani aha nshonga egi kandi eri n'aha mikutu ya intaneti.<sup>62</sup>



60 TacticalTechnologyCollective,DecryptingEncryption, <https://tacticaltech.org/projects/decrypting-encryption>, Accessed on 9th February 2017

61 ZeitOnline,Tell-onTelephone,<http://www.zeit.de/dat-enschutz/malte-spitz-data-retention>, Accessed on 9th February 2017

62 Ted,Yourphonecompanyiswatching,[http://www.ted.com/talks/malte\\_spitz\\_your\\_phone\\_company\\_is\\_watching?language=en](http://www.ted.com/talks/malte_spitz_your_phone_company_is_watching?language=en), Accessed on the 9th 2017

## OKU WAAKUBAASA KWETANTARA KUREMESIBWA KUKORESA INTANETI

Ebitongore bingi, za gavumenti, amashomero hamwe n'ebitongore bya gavumenti nibikozesa puroguraamu z'okuremesaabantuabarikukozesa intaneti kuhika ahari za webusayiti ezimwe n'okutunga obuheereza obumwe obwa intaneti. Enkora egi niyo barikweta okucencura nari okugyegyena nari okuremesa abarikukozesa intaneti. obuheereza obumwe bwa intaneti. Eki nibakyete okuzibira nari okuremesibwa kandi enkora egi n'omuringo gw'okuremesa abantu bamwe kukoresa intaneti. Okugyegyena ebirikuhandiikwa aha intaneti n'okw'emiringo y'omutaano. Obumwe webusayiti yoona nibagiihiraho kimwe aha intaneti, obumwe gavumenti eihaho peegi ezimwe az'aha webusayiti, kandi obumwe ebirikuhandiikwa babiremesa abantu kubishoma kurugiirira aha bigambo ebikuru ebirikuba biri omu borthandiko ebyo. Eihanga erimwe niribaasa kuzibira abantu kukoresa Facebook nari rimese abantu kutunga peegi za Facebook ezimwe nari rimese abantu kutunga peegi yoona nari webusayiti erimu ebigambo "okutinga" nari okuteerana kw'abantu abarikushushanisa obuhangwa nk'abashaija n'abashaija nari omukazi kuteerana omuby'omubonano n'omukazi mugyensi we.

Noobaasa kutunga eki orikwenda, tinshonga oku gavumenti erikuba eremesize abantu kugahikaho, orikoresa ekintu ekikubaasa kukuhwera kuhingura okuremesibwa oku. Ebikoreso by'okuhinguza okuremesibwa obwire obwingi nibikora birikuraba omu kurabya enkora yaawe erikushagika ebihandiiko byawe aha intaneti (web) omu kompyuta endijo kwenda ekihandiiko kyawee kirabe ahari za kompyuta ezirkukiremesa kushomwa. Obuheereza obu orikoresa kurabyamu amakuru gaawe nibumanywa nka 'proxy' omu Rungyereza

Enkora z'okwetantara okuremesibwa kukoresa intaneti tizirkukira kwongyera aha kwerinda kw'omuntu nari kurinda owaahandiika kumanywa, n'ezo ezirkuraganisa ku zirkurinda omuhandiiki n'obu zaakuba ezo eziraho ebigambo ebirkworeka ku birikushekyerera omuhandiiki omu maziina gaazo.

Hariho emiringo y'omutaano y'okwetantara kuremesibwa kuta ebihandiiko aha intaneti kandi emwe omuri egi eine obuheereza bw'okurinda nari kushwekyerera abarikubitaho. Omuringo ogurukukirayo

kuba ogw'omugasho ahari iwe nigurugiirira aha kabiaku orikuba oine omu kuzibirwa kukoresa intaneti.

### Emiringo eyanguhi y'okukoresa

HTTPS n'omuringo oguriho oburinzi ogw'enkora ya HTTP ogurukoresibwa kuhika ahari za webusayiti. Obumwe ekitongore ekirikukingira encoresa ya intaneti nikibaasa kuzibira omuringo ogutaine burinzi ogurukoresibwa kuhika ahari za webusayiti, kikwikirize kukoresa omuhanda ogu ogurikutandika na HTTPS. Eki nikiyamba.

Okucencura oku ebihandiiko byawe birikurabamu kwaba nikurugiirira aha bigambo ebikuru ebikukoresibwa omu kusherura ebigambo nari kurikukingira za peegi ezimwe. Omuhanda ogwa HTTPS niguzibira ekitongore ekirikuremesa abantu kukoresa intaneti kureeba ebiri aha weebu (web). N'ahabwekyo tibarikubaasa kushoma ebigambo ebirkukoresibwa omu kusherura omukutu ogwe nari peegi ki ei orikutaayaayira (ab'omu bitongore ebi nibabaasa kureeba amaziina g'emihanda yoona ei orikutaayaayira).

Waaba nooteekateeka ku hariho okukingirwa okw'omuringo ogu, gyezaho kuhandika <https://otakahandikire.eiziina.rya.domeyini.omu.mwanya.gwa> <http://>.

Gyezaho kukoresa **HTTPS Everywhere**<sup>63</sup> kubaasa kutaho HTTPS ahabw'emikutu nari webusayiti ezirkugishagika.

Omuringo ogundi ogu waakubaasa kwetantara okuremesibwa kukoresa intaneti n'okuhindura eiziina rya domeyini nari URL. Eky'okureeberaho, omu mwanya gw'okutaayaayira <http://twitter.com><sup>64</sup>, noobaasa kutaayaayira <http://m.twitter.com><sup>65</sup>, ekika kya webusayiti ekl orikubaasa kutunga hoona ah'orikuba ori. Abarikushwijuma ebirikuza aha intaneti abarikukingaho za webusayiti nari web pages nibakira kukorera aha rukarara rwa za webusayiti ezi bakingire. N'ahabwekyo webusayiti yoona etari aha rukaraara orwe neerabamu. Nibabaasa obutamanya empinduka zoona eziri omu maziina ga website (domain name)-namunonga webusayiti yaaba neemanya ngu ekakingwa ekahandiikisa amaziina agarikuhingura ahari rimwe.

63 Electronic Frontier Foundation, *Https ever y where*, <https://www.eff.org/https-ever-ywhere>, Accessed on 9th February 2017

64 Twitter, <https://twitter.com/>, Accessed on 9th 2017

65 Twitter, Login <https://mobile.twitter.com/home>, Accessed on 9th Februar y 2017



## **Enkora z'okuhika ahari za webusayiti ezitarikwikirizibwa**

Enkora y'okuhika aha webusayiti ezitarikwikirizibwa (nka <http://proxy.org/><sup>66</sup>)<sup>66</sup> n'omuringo murungi gw'okuhingura okuremesibwa kuza ahari za webusayiti ezimwe. Kwenda ngu ohike ahari za webusayiti ezitarikwikirizibwa, eki oshemereire kukora n'okutaasyamu endagiiriro ei oihireho ebintu ebimwe, proxy neeza kukworeka ebi waashaba kushomaho.

Enkora egi y'okuhingura emihanda etaikiriziibwe eya webusayiti n'omuringo murungi gw'okuhika ahari za webusayiti ezibibirwe kwonka obwire obwingi tizirikukuhereza oburinzi kandi tikusharaho kurungi waaba ori omu kabi k'omuntu orikureebuza ebi orikukora aha intaneti. Ekindi terikuza kukuhwera kureeba webusayiti ezindi ezitarikwikirizibwa nari obuhereza bwa web page nka puroguraamu y'okwohoreza obutumwa obw'ahonaaho.

Eky'aha muheru enkora ezi nizireetaho akabi k'abantu abarikuzikoresa kutaahirirwa omu bugabe bwabo bw'okukuma ebihama byabo kurugiirira aha nkora n'embeera y'akabi k'omuntu arikuba arimu, ahaw'okuba proxy neeza kuba ehandiikire byona ebi orikukora aha intaneti.

## **Enkora za DNS**

Obwire obwingi za gavumenti nizibaasa kuta omunkora enteekateeka z'okuremesa abantu kukoresa webusayiti ezimwe omu mahanga gaabo kuraba omu kuragiira abarikukora ahaby'obuheereza bwa intaneti kutaho enkarara eza webusayiti ezitarikwikirizibwa barikukoresa eki barikweta Domain Name Service (DNS). Za kompyuta za DNS ni zimwe aha nkora ezirkwiriza browser yaawe kumanya endagiiriro ya webusayiti ei orikumanya. Eky'okureeberaho waahandiika [www.bbc.co.uk](http://www.bbc.co.uk), kompyuta ya DNS<sup>67</sup> niyo erikugambira browser yaawe ngu BBC eri aha kompyuta aha ndagiiriro ya IP 212.58.244.20. Ku erikukora aha DNS kompyuta yaawe neebaasa kubaihabaihwu eteekateke ngu webusayiti nka BBC, tekabahoga neinga ngu eri omu mwanya ogutahikire.

Kuhingura okukingirwa kukoresa intaneti kw'omuringo ogu nikibaasa kuhindura puroguraamu za kompyuta za DNS ezirkukoresibwa kompyuta yaawe. Google neehereza puroguraamu ibiri ezirkukozesibwa abantu boona (public servers<sup>68</sup>)

8.8.8 na 8.8.4.4. OpenDN68S neehereza 'public servers' ahari 208.67.222.222 na 208.67.220.220 kandi erikuremesa puroguraamu za malware ezirkumanywa na phishing sites<sup>69</sup>.

Noobaasa kutaho setingi ezi eza DNS aha router ya ofisi nari erikukoresibwa abantu baangi kwenda ngu abantu boona babaase kugasirwa enkora eziaha nkora z'omutaano kandi za router nizibaasa kushangwa aha <https://use.opendns.com>.

## **Empurizana za Virtual Private Networks**

Empurizana za Virtual Private Network (VPN) neesindika obutumwa obutarikubaasa kushomwa buri omwe oburikukwata aha Internet data ahagati ya kompyuta yaawe hamwe n'abarikuheereza obuheereza bwa VPN abari omu ihanga erindi. Obuhereza bwa VPN bwaba buteirweho gye, noobaasa kubukoresa kutunga web pages, e-mail, kwohoreza obutumwa bwaho, VoIP hamwe n'obuheereza bwa intaneti obundi. VPN neerinda ab'omu ihanga ryawe kushoma amakuru gaawe, kwonka ekitongore ekirikukuheereza ebya VPN yaawe eihanga ryawe kutaahirira amakuru gaawe obutashoma ebintu ebirikukukwataho kwonka ekitongore ekirikukuheereza obuheereza obu obwa VPB nikibaasa kubiika ebirikworeka buri bwire bwona obu waakoreise intaneti (za webusayiti ezi orikutunga kandi ni ryari obu orikuzitunga) nangwa nikibaasa n'okuhereesa abantu abandi obushoboorozi bw'okushoma ebi orikushoma.

Ezimwe ahari za VPNs za busha ezi oshemereire kuteekateeka kukoresa ni Betternet<sup>70</sup>, Psiphon<sup>71</sup>, BitMask<sup>72</sup>, na Opera<sup>73</sup>.

Obuhabuzi obundi oburikukwata aha buheereza bwa VPN bw'okushashurira reeba aha<sup>74</sup>. Za VPNs z'omutaano eziine obushoboorozi bw'okurinda ebihama byawe nizibaasa kuba zirikorwaho abantu b'abeinazi.

66 Proxy, Proxif y, <http://proxy.org/>, Accessed on the 9th 2017

67 Google, Public DNS, <https://developers.google.com/speed/public-dns/?hl=en>, Accessed on the 9th 2017

68 Open DNS, <https://use.opendns.com/>, Accessed on the 9th Februar y 2017

69 Open DNS, <https://use.opendns.com/>, Accessed on the 9th Februar y 2017

70 Betternet, Online security and privacy for all devices and Platform, <https://www.betternet.co> , Accessed on the 9th February 2017

71 Psiphon, Beyond borders, <https://www.psiphon3.com/>,Accessed on the 9th Februar y 2017

72 Bitmask, Encr ypted communication for mere mortals (superheroes welcome, too) <https://bitmask.net> , Accessed on the 9th Februar y 2017

73 Opera, Unblock the web for free, <https://www.opera.com/apps/vpn> , Accessed on the 9th Februar y 2017

74 Torrentfreak, What Are The Best Anonymous VPN Ser- vices? <https://torrentfreak.com/which-vpn-services-take-your-anonymity-seriously-2014-edition-140315/> Accessed on December 12, 2014

## Tor

Tor ni puroguraamu ya busha eine obuheereza bw'okushereka eiziina ryawe na byona ebirikukwataho ebirikutuma abantu baakumanya kandi erikukuhwera kwehinguririza okuzibirwa kuza aha webusayiti ezimwe. Ku orikukoresa Tor, amakuru agu orikuhandiika nigaba garinzirwe ahabw'okuba omuhanda ogu orikurabamu nigutwarwa obuheereza bwa neetiwaka oburikumanywa nka onion routers. Eki nikibaasa kukuhwera kushereka ebirikukwataho nk'amaziina n'ebindi ahabw'okuba kompyuta ei orikukoresa tiharibaho obu ereebire endagiiriro yaawe ya IP address, kwonka neereebeke eri aha Tor router ei ohererukire kurabaho.

Yaakoresibwa n'enkora ezindi (bridges na obfsproxy) Tor ni omuringo gw'omutindo gw'okwetantara kuzibirwa gavumenti kukoresa webusayiti ezimwe, ahabw'okuba neeza kubaasa kuhingura okuremesibwa kwona oku gavumenti erikuba etaireho kandi zaakoresibwa gye nizikurinda abaheekyera kuhurikiza aha netiwaaka z'omu ihanga ryawe. Kwonka enkora egi neetwara mpora.

Yega oku waakubaasa kukoresa Tor orikukoresa endagiiriro kuruga omuri Electronic Frontier Foundation.<sup>75</sup>

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<sup>75</sup> Electronic Frontier Foundation, How to: Use Tor for Windows <https://ssd.eff.org/en/module/how-use-tor-windows#overlay=en/node/57/> Accessed on the 9th February 2017



# EBY'OKWERINDA AHARI AKAUNTA

Eby'okwerinda kw'amasi mu na za kompyuta omu bicweka bitaano

## OKUHANGAHANGA PAASIWAADI Z'AMAANI

Ahabw'okuba kwijuka paasiwaadi z'omutaano kigumire, abantu nibaremesibwa kukoresa gye za paasiwaadi. Abarikukoresa za komputa ku barikweshanga baine kuhangahanga paasiwaadi nsa ahabwa buri kimwe, hariho bwohe y'okukoresa paasiwaadi emwe ahabwa akaunta, obuheereza na za webusaiti z'omutaano.

Ekikorwa eki nikibi munonga ahabw'okuba nikibaasa kutuma abantu abatarikwirizibwa kuhika omu akaunta ezirkushushanisa akaunta. Eki nikimanyisa paasiwaadi neebaasa kuba obuheereza bw'okwerinda yaaba ekoresiibwe.

Okwetantara kugaruka kukoresa paasiwaadi emwe n'omuringo gw'okwerinda, kwonka torikuza kubaasa kwijuka za paasiwaadi zaawe zoona buri emwe yaaba eri ey'omutaano. Eky'omugisha murungi, hariho puroguraamu ezirkubaasa kukuhwera kubaasa ahari nshonga egi – Paasiwaadi manegya (nari shi seefu ya paasiward) ni puroguraamu erikuhwera kubiika gye za paasiwaadi nyingi. Eki nikihwera kureeba ngu omuntu tiyaakoresa paasiwaadi aha akaunta z'omutaano. Paasiwaadi manegya nerinda za paasiwaadi zaawe zoona erikwejunisa paasiwaadi emwe erikwigura ezindi zoona (nari ebigambo ky'ekihama – reeba ebi ahaifo) n'ahabwekyo nooba oine kwijuka ekintu kimwe, kyonka. Paasiwaadi manegya neekukorera buri kimwe, ekuhangira paasiwaadi kandi n'okuzijuka eziijuka.

Eky'okureeberaho, KeePassX ni puroguraamu ya busha erikubiika za paasiwaadi ei orikubaasa kuta aha kompyuta yaawe. Ni kikuru munonga kureeba ngu waaba nookoresa KeePaasX, terikuba neebiika ebi waayongyeraho otakigiragiire. N'ahabwekyo yaasiisikara waaherize kwongyeramu za paasiwaadi ezindi nizibaasa kuburira kimwe. Eki noobaasa kukihindura waaba nookora entebeekanisa ya za puroguraamu.

Seseko n'omwebembezinaridayirekitaw'ekitongore ky'abarikuteerana omuby'omubonano omu miringo etarikwikirizibwa n'abandi bantu batarikwikirizana nayo eky'okureeberaho, ebitingwa narishi abashaija kuteerana omuby'obunano n'abashaija bataahi baabo nari abakazi kuterana n'abakazi. Akasheeshe k'eizooba rimwe, akatunga email aha simu ye burikumugira ngu obwire bw'okukoresa email ye bwaza kuhwaho omu shaaha ina yaaba atagizire eki yaakora. Aha muheru gwa email egyo, hakaba hariho endagiiriro ([link](#)) eyaabaire neemuheereza omugisha gw'okuza omu email ye kugira ngu etakaakingwaho. Taratwire bwire kukiteekateekaho kwihihaho akaigura link egyo eyaamutweire omu page y'okwiguraho erukushushana n'ey'okwiguraho Gmail. Aho naaho yaahandiika eiziina rya email ye hamwe na paasiwaadi, kwonka ku yaaherize kubitaasyamu, tihariho ekyabaireho kyona. Yaagaruka enyima, yaagumizamu arikweshomera za email ze.

Eizooba eryo ryonyini, yaatunga ripoota ngu website y'ekitongore bagitaahiriire, baagishiisha baagifiisa kubi ngu kandi tekibaasa kuhikwaho. Obwire nibwo bumwe orikukurira eby'empurizaganu omu bya kompyuta (ICT) omu kitongore yaamugambira ku akasheeshe ako yaatungire email ei Seseko yaamwoherereize arikumushaba puroguraamu y'okwemereza kuhikirira webusayiti ahabw'obwire bukye.

Seseko eki yaarabiremu akasheeshe ako, kikaba kiri akakodyo k'okumwibaho paasiwaadi kugira ngu bamwibeho amakuru. Abainazi ku baamazire kutaaha omu email ye, kikaba nikibaruhukira kuhwerekyereza buri mwanya gwona omu kitongore.

Hariho omuringo ogwanguhi kandi ogw'amaani ogu Seseko arikubaasa kukoresa kwetantara okutaahirirwa kw'omuringo ogu kugaruka kumuhikaho. Enkora egi n'eyokukoresa emiringo ebiri kuhamya ku ariwe orikukoresa email egyo. Ekirikumanyisa ngu naakoresa paasiwaadi ataho n'ekindi kintu kuhamya. Ekindi nikihwera kugira paasiwaadi y'amaani kandi y'omutaano ahabwa

## buri akaunta eri aha intaneti.

Yetegyereze ngu waaba nookoresa KeePassX, terikuza kubiika ebi waayongyeraho. Ekirikumanyisa ngu yaasiisikara waaherize kwongyeramu za paasiwaadi (ebigambo nari enamba yaawe y'ekihama) nibibaasa kuburira kimwe. Eki noobaasa kukihindura omu waaba nootereeza za puroguraamu ezishemereire kurugiirira aha nkoresa yaawe (settings).

Okukoresa paasiwaadi manegya nikuhwera kutoorana paasiwaadi ezi omushuma atarikubaasa kupaaza akamanya.

Eki nakyo ni kikuru munonga ahabw'okuba obwire obwingi abantu abarikukoresa za kompyuta nibatoorana za paasiwaadi ngufu, obugambo bwanguhi ezi omushuma arikubaasa kuteebereza akamanya ezirimu "password1," "12345," ebiro by'okwezi ebi omuntu yaazaariirweho, eiziina nari ekikubyo ky'omukundwa, omunywani nari eitungo eri omuntu arikukunda. Paasiwaadi manegya neebaasa kukuhwera kuhanga kandi okakoresa paasiwaadi etariho enkora erikukuratirwa ei omuntu atarikubaasa kuteebereza. Ekyokureeberaho, paasiwaadi manegya neebaasa kutoorana za paasiwaadi nka "vAeJZ!Q3p\$Kdkz/CRHzj0v7," ei omuntu atarikubaasa kwijuka nari kuteebereza. Otakaayerarikirira, paasiwaadi manegya neebaasa kukuhwera kwijuka za paasiwaadi ezi!

## Okutoorana paasiwaadi nungi

Hariho za paasiwaadi nkye ezirkwetengwa kwijukwa kandi ezirkwetengwa kuba ez'amaani: ezo ezirkubuza ebintu byawe zirikukoresa ebigambo nari enamba z'ekihama, hamwe na paasiwaadi erikukirayo ei orikukoresa ahari paasiwaadi manegya yaawe.

Obwa hati za kompyuta nizirahuka kuteebereza za paasiwaadi ngufu z'eniyuguta nari enamba ezitarikhika ikumi. Ekirikumanyisa ngu za paasiwaadi engufu z'omuringo gwona, ez'omuntu arikumara agatoorana nka  $nQ\backslash m=8*x$  nari  $ls7e\&nUY$  neinga r gaG5^bG, ti z'amaani ekirikumara z'okukoresa n'enkora y'okushereka eniyuguta n'enamba (encryption) eriho obwahati.

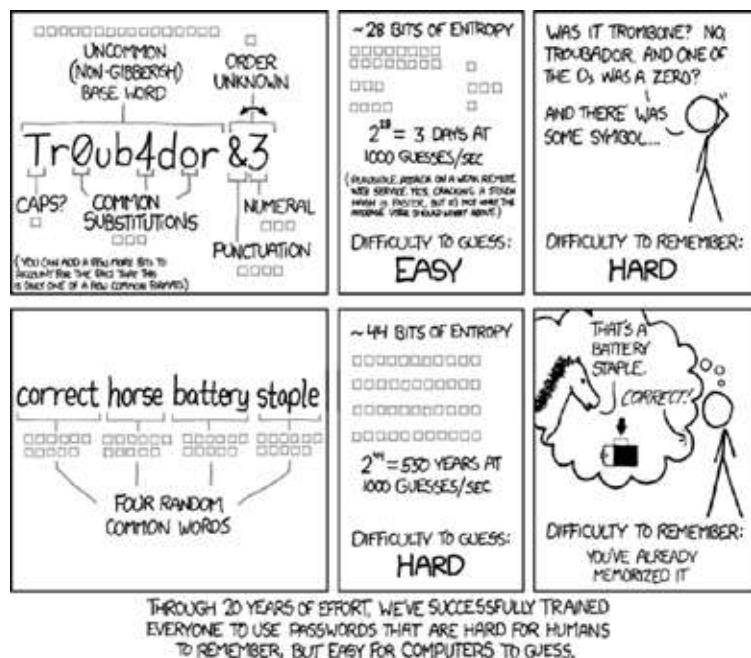
Hariho emiringo mingiy'okuhanga paasiwaadi z'amaani hamwe n'ebigambo ebirikubaasa kurahuka kwijukwa; omuringo ogwanguhi n'omuringo gw'okukoresa obu bokisi nk'oburikukoresibwa omu muzaano (dice) ogurikumanywa nka "Diceware."<sup>76</sup>eyajumbwirwe

omukugu omuri za puroguraamu za kompyuta orikumanywa nka Arnold Reinholt.

Omuringo ogwa Reinholt okuhiringitsa obubokisi oburukushusha nk'oburikukoresibwa omu muzaano gwa ludo kwenda kutoorana n'akaruur katari k'okushoroora orukarara rw'ebigambo, ebigambo ebi nibyo birikuza kurugamu ebigambo byaweh. Ahabw'ebigambo ebiri eby'ekihama (n'okurinda paasiwaadi) nitukuhabura kutoorana ebigambo ebitari ahansi y'ebigambo mukaaga.

Omuringo gwa Diceware ogworobi gurimu iwe wenka kwehikaanisa okuhikaanisa ebigambo by'omutaano ebitooreinwe hatariho kushoroora.

Reeba ekishushani eki ekirikworeka ku enkora egi erikubaasa kuba eyanguhi kukoresa kukira kandi eine okwerinda kukira kukoresa paasiwaadi ezigumire nka ' $nQ\backslash m=8*x'77$



Ku orikukoresa paasiwaadi manegya, eby'okwerinda kwa paasiwaadi yaawe hamwe na master paasiwaadi nibiba biine amaani agarikwingana n'aga kompyuta ei paasiwaadi manegya etairweho, puroguraamu ya Spyware neebaasa kukureeba orikuhandiika master password kandi ebaase kwiba ebiri omu paasiwaadi egeo. N'ahabwekyo ni kikuru munonga kureeba ngu kompyuta yaawe n'ebiyoma ebindi ebi orikukoresa bitaine puroguraamu zonna z'obwinazi waaba nookoresa paasiwaadi manegya.



Enkora y'okukoresa ebintu ebirikuwingura ahari kimwe ku ari iwe orikukoresa akaunti egyo hamwe n'okukoresa paasiwaadi omurundi gumwe

Empeereza enyingi<sup>77</sup> na zapuroguraamu nizikwikiriza kukoresa enkora erikukoresa ebintu bibiri by'okuhamya ku ari iwe orikukoresa akaunti egyo, erikumanywa nka two-factor authentication, nari two-step verification neinga two-step login. Aha ekiteekateeko n'okugira ngu omuntu yaaza kukoresa akaunti, oshemereire kuba oine ekintu ekirikureebwa kandi kikakwatwaho, obwire obwingi nk'esimu y'omungaro kwonka obundi ekintu ky'omutaano ekirikumanywa nka security token. Okukoresa enkora egi nikihwera kureeba ngu paasiwaadi yaawe y'obuheereza obu baaba bagiibire, omushuma tarikuza kubaasa kukora eki arikwenda n'ekyoma kyawe ky'empurizana hamwe n'enamba ez'omutaano ezi erikubaasa kuhanga.

Eki nikimanyisa ngu omushuma naaba aine kukoresa kompyuta yaawe n'esimu yaawe kubaasa kukoresa akaunti yaawe.

Ahabw'okuba eki nikibaasa kukoresibwa bwanyima y'enkoragana n'abarikugaba obuheereza, tihariho omuringo gwona ogu waakubaasa kukora eki wenka waaba nookoresa obuheereza obutaine mpeereza egi.

Enkora y'okukoresa ebintu bibiri kuhamya ku ori mukama wa akaunti orikwejunisa esimu y'omungaro neebaasa kukora omu miringo ebiri: abarikugaba obuheereza nibabaasa kukwohororeza SMS aha simu yaawe buri bwire bwona waagyezaho kukoresa akaunti yaawe (ekirikureetera kwongyera aha koodi ey'orikwetenga kutaasyamu), nainga esimu yaawe neebaasa kugira puroguraamu ei orikukoresa kuhamya ku ori mukama wa akaunti (authenticator) erikukora za koodi z'okwerinda kuruga omu simu. Eki nikija kukuhwera kurinda akaunti yaawe omushuma yaaba aine paasiwaadi yaawe kwonka ataine simu yaawe y'omungaro.

Empeereza ezimwe nka Google, nazo nizikwikiriza kuhandiika orukarara orwa za paasiwaadi ezi orikubaasa kukoresa omurundi gumwe. Ezi zishemereire kuhandiikwa aha rupapura oru orikutambura narwo (kwonka obwire obumwe nikibaasika kukwata omuhendo mukye ahari ezo).

Buri emwe ahari za paawaadi ezi neekora omurundi gumwe gwonka. N'ahabwekyo, emwe puroguraamu ya spyware yaagiiba waaheza kugitaasyamu, omushuma tarikubaasa kugikoresa omu bwire bw'omumaisho.

### **Okutiinatiinisibwa kuteerwa n'okutwarwa omu bihome**

Eky'aha muheru, yetegyereze hariho omurundi gumwe gwonka ogu abashuma barikubaasa kutunga paasiwaadi yaawe. Nibabaasa kukutiiniisiriza ngu nibaza kukuhutaaza nari kukutwara omu kihome. Waatiina, ngu eki nikibaasa kubaho, sherura omuringo ogu waakubaasa kushereka ku hariho data nari ekyoma eki orikugyezaho kurinda, omu mwanya gw'okweyesiga ngu toribaho obu oheireyo paasiwaadi yaawe. Ekintu kimwe ekirikubaasika n'okugira haakiri akaunti emwe erimu ebintu ebitaine mugasho, ei orikubaasa kugaba password yaayo ahonaaho.

Obuheereza obwingi bwa intaneti nibuheereza enkora ey'okuhayo ebintu bibiri eby'okuhamya ku ori mukama wa akaunti egyo. Orukarara orusya rw'obuheereza obu buri aha <https://www.turnon2fa.com>. Noobaasa kutandika na akaunti zaawe eza Google<sup>78</sup>, Yahoo<sup>79</sup>, Facebook<sup>80</sup>, na Twitter<sup>81</sup>

Waaba oine enhonga nungi y'okukwerarikiriza ngu omuntu naabaasa kukutiiniisiriza ababwa paasiwaadi zaawe, kikaabaire kirungi kureeba ngu ekyoma kyawe ky'empurizana kyahindurwamu kugira ngu tikirikuza kureebeka ngu akaunti ei orikuhayo ti akaunti yenyini. Akaunti yaawe ei otarikwenda kubaheereza eri aha kompyuta yaawe, nari neereebeka waayigura browser? Kyaba kiri kityo, noobaasa kuhindura aha puroguraamu kwenda ngu akaunti yaawe etakaareebeka. Nyaburawе yetegyereze ngu okuhwerekyereza obwa mushinja nikibaasa kukoresibwa nk'orurbanja rw'omutaano, kandi nikibaasa kukurugiramu ebibi munonga. Obwire obumwe, eki nikibaasa kurahukira gavumenti kuhamya kandi n'okwikiriza n'ekifubiro ky'omushango ogu barikuba nibacondoozaho.

<sup>77</sup> Electronic Frontier Foundation, How to: Use Tor for Win- dows, <https://ssd.eff.org/en/module/how-use-tor-windows#over-lay=en/node/57/>, Accessed on the 9th Februar y 2017

<sup>78</sup> Google, 2-step verification, <https://w w.google.com/landing/2step/>, Accessed on the 9th 2017

<sup>79</sup> Yahoo, Signin, <https://login.yahoo.com/account> , Ac- cessed on the 9th Februar y 2017

<sup>80</sup> Facebook, Introducing login approvals, <https://w w.facebook.com/notes/facebook-engineering/introducing-login-ap- provals/10150172618258920>, Accessed on the 9th Februar y 2017

<sup>81</sup> Twitter,Get started with login aprovals, <https://blog.t witter.com/2013/getting-star ted-with-login-verification> , Accessed, on the 9th Februar y 2017

# EBY'OKWERINDA HA MASIMU G'OMUNGARO

Eby'okwerinda hari intaneti omu bicweka bitaano

## EKIZIBU EKIRI AHA MASIMU G'OMUNGARO

Amasimu g'omungaro hati gari buri hamwe kandi n'empurizana erikwetaagwa haihi buri omwe — obwahati tizirkukoresibwa kuteera amasimu kwonka baitu kutunga intaneti, kwohoreza SMS hamwe n'okubiika ebihandiiko ebirikukwata ahansi yoona.

Eky'omugisha mubi, amasimu g'omungaro tigarakozirwe n'eby'okwerinda n'okurinda ebihama. Tigarikuhwera kihango omu kurinda empurizana zaawe, kandi gakuta omu kabi k'abambega kumanya ebirikukukwataho. Amasimu g'omungaro amaingi tigarikuheereza omuntu orikugikoresa obushoborozi bw'okugikoresa nk'oku arikwenda nk'obu kompyuta erikumuheereza. Kigumire kugaruka kutamu puroguraamu ei erikukoresa yaaheza kushishikara, kandi kigumire kushwijuma puroguraamu ezirikushiisha ezindi zaagitaahirira (malware) kwihaho n'okugaruzaho za puroguraamu ezitarikwetaagibwa kandi kigumire kuremesa abarikukora obwa mbega obutaahika ebihama ebirimu..

Ebimwe aha bizibu ebi nibibaasa kushoboororwa barikukoresa third-party privacy software—kwonka ezimwe tizirkubaasa. Aha nitusa kushoboorora emwe aha miringo ei amasimu garikubaasa kuhwera omu bwa mbega haza zikashohoza ebihama bya bakama baazo.

## OKUCOONDOOZA AHA MYANYA

Obumwe aha buremeezi oburikukirayo aha masimu g'omungaro —kandi ogurikukira obutareebeka — n'omuringo ogu garikuba nigarangirira omwanya ogu orimu obwire bwona, eizooba ryona (nangwa n'ekiro kyona) kuraba aha bumanyiso obu zirikuguma nizooreka. Hariho emiringo mingi ei omwanya ogwa buri ibara simu erimu erikubaasa kumanywa abantu abandi ahu eri.

Fayed n'omwe aha barikwehayo kurwanirira empinduka omumbera y'abantun'eby'obutegyeki omwihanga orikurwanirira amazima omu mirimo, okushoborora gye encoresa ya sente n'ebirikukorwa aha mirimo, n'obugabe bw'abantu kugamba eki bari aha mutima. Aine banywani be abatorokire omwihanga ahabw'okutuntuzibwa gavumenti. Obwire obwingi nateera amasimu nari ayohereza obutumwa aha simu aganiiraho n'abanywani be abarikurwanirira empinduka muby'obutegyeki nkawe abari omu mahanga agandi arikubamanyisa embeera eri omwihanga kandi obumwe bamugambira ebintu ebi atarikubaasa kugambira abantu abandi omwihanga.

Akasheshe k'eizooba rimwe, abaporiisi bakamukwatira omuka ye kandi baamutwara omu mbuga z'amateeka barikumujunana omushango gw'okugyezaho kuhamba gavumenti n'enkoragana n'abahekyera. Omu kooti, obwamushinja oburimu obutambi bw'amasimu agu yaabaire ateerera banywani be abari aheeru y'eihanga hamwe n'obutumwa obwa ha simu (SMS) obu yabahandikiire arikugamba kubi ahari gavumenti..

Fayed akaba ashemeriire kumanya ngu amasimu na za SMS za buri kaire tibirikubaasa kukoresibwa kugamba ebihama ahabw'okuba amaraka nigarahuka kukwatwa ebitongore by'amasimu. Fayed ashemereire kwega akabi akari omuri eki hamwe na za puroguraamu z'amasimu ezirkubaasa kukwata amaraka na SMS.

## Okucondooza aha masimu g'omungaro

Ekitongore ky'amasimu nikibaasa kumanya esimu ya kasitoma ahu erikuba eri esimu egyo yaaba eriho kandi eriho neetiwaaka. Kubaasa kukora eki nikiruga aha nkora y'amasimu g'omungaro zikozirwe kugira ngu niibaasa kupima gye ahu esimu eri.



Omuringo ogu ekitongore ky'amasimu kirikubaasa kukoraeki n'okushwijaama anaagariahasimu (signal) ag'emirongooti y'omutaano kuruga aha simu y'omuntu reero bapima omwanya ogu esimu egoy erimu kwenda kwetegyereza eki baareeba. Tihariho oku omuntu arikubaasa kweshereka okucondoozbaho oku esimu yaawe yaaba eriho kandi erikwohoreza obutumwa burikworeka ahu eri omu kitongore ky'esimu. Obutaingana omu nkoragana ahagati ya gavumenti hamwe n'ekitongore ky'amasimu nikimanyisa ngu eshaaha yoona gavumenti neebaasa kugyema ekitongore ky'amasimu kugiheereza ebirukwata aha mwanya ogu kuhayo omwanya ogu esimu ei barikubuurizaho erikuba erimu (omu bwire obwe nari kubagambira ekyabaho byahweireho) bwanyima y'oku. Omu mwaka ogwa 2010, omunyabiragi w'omu German orikutonganirira okurinda ebihama by'abantu ou barikweta Malte Spitz akakozesa amateeka g'okurinda ebihama by'abantu kugambira ekitongore ky'esimu y'engaro ei yaabaire arikukoresa kumuheereza obutambi n'ebihandiiko byona ebi baabeire baine ebirikumukwataho kuruga aha simu ye, yaasharamu kubihandiikaho kwenda ngu abantu abandi bamanye oku ebitongore by'amasimu birikubaasa kukora obutatsi ahari ba kasitoma baabo omu muringo ogu. (Noobaasa kureebera ahari82 ebi ekitongore ky'esimu kyabaire nikimumanyaho.) Eky'okugira ngu gavumenti neebaasa kutunga amakuru nk'aga, tikitebyo: kiriyo nikikoresibwa abarikuta amateeka omu nkora omu nsi yoona.

Ekindi eki gavumenti erikubaasa kukora n'okushaba ekitongore ky'amasimu kubaheereza amasimu goona agaabaire gari omu mwanya gumwe obwire bumwe. Eki nikibaasa kukoresibwa kucondooza ekihagar ekyakorwa nainga okumanya owaaba ariho enshobe obu yaaba nekorwa. (Gavumenti ya Ukraine ekakoresa enkora egi ahabw'enshonga egi omu mwaka gw'enkumi 2014, amasimu g'omungaro goona agaabaire gari omu mwanya ogwabeireho okwediima kw'abantu ahabwa gavumenti.)

Hariho n'ebintu ebini ebirukoresibwa ebitongore ebirkuta amateeka omunkora nari ebitongore ebindi tekenorogye y'ahaiguru ebirikubaasa kutunga ebirukwata aha mwanya ogu esimu erimu barikwejunisa enkora ey'aha mutindo gw'ensi yoona

ey'okuhurikiza ebi abantu barikugambira aha simu erikumanywa nka IMSI catchers (esimu y'omungaro egingiriire ei barikukoresa kubaihabaiha nk'esimu y'enyini haza bakagikoresa kukwata abantu abamwe abarikukoresa amasimu, bakamanya omwanya ogu barimu haza bakahurikiza amasimu gaabo. IMSI catchers ni nk'amasimu agandi kandi nigareebwa agarikwetengwa kutwarwa omu mwanya kwenda ngu gakoresibwe okutata omwanya ogwe. Ahi turikugambira tihariho omuringo ogrikwesigwa gw'okurwanisa enkora egi kwonka hariho puroguraamu ezimwe ezirkubaasa kumanyisa omuntu ku ziri omu mwanya ogwe, obwire obumwe. Obwire obumwe kwhaho enkora ya 2G hamwe nenkora erikwikiriza omuntu kukoresa esimu aheeru y'eihanga (roaming).



Data obtained by Malte Spitz from his telephone company showing his movements and phone call data. Explore 6 months of this data at Zeit Online.<sup>83</sup>

### **Okwiba amakuru agarikukwata aha mwanya kuruga aha za apps z'amasimu n'okutaayaayira za webusayiti**

Amasimu g'omurembe nigheereza obuheereza bw'esimu kworeka omwanya ogu erimu, obwire obwingi garikukoresa GPS kandi obundi garikukoresa obuhereza obundi obu zirikutunga kuruga aha mirongooti ya kampuni (obwire obwingi ekirikugyema kampuni kuteebereza omwanya ogu esimu zirio kurugiirira aha rukarara rw'emirongooyi y'amasimu hamwe na Wi-Fi networks ezi esimu erikubaasa kureeba kuruga ahu eri). Puroguraamu nizibaasa

82 Zeit Online, Betrayed by your own data, <http://www.zeit.de/digital/datenschutz/2011-03/data-protection-malte-spitz>, Accessed on the 9th February 2017

83 Zeit online, Tell-all telephone, <http://www.zeit.de/datenschutz/malte-spitz-data-retention>, Accessed on the 9th February 2017

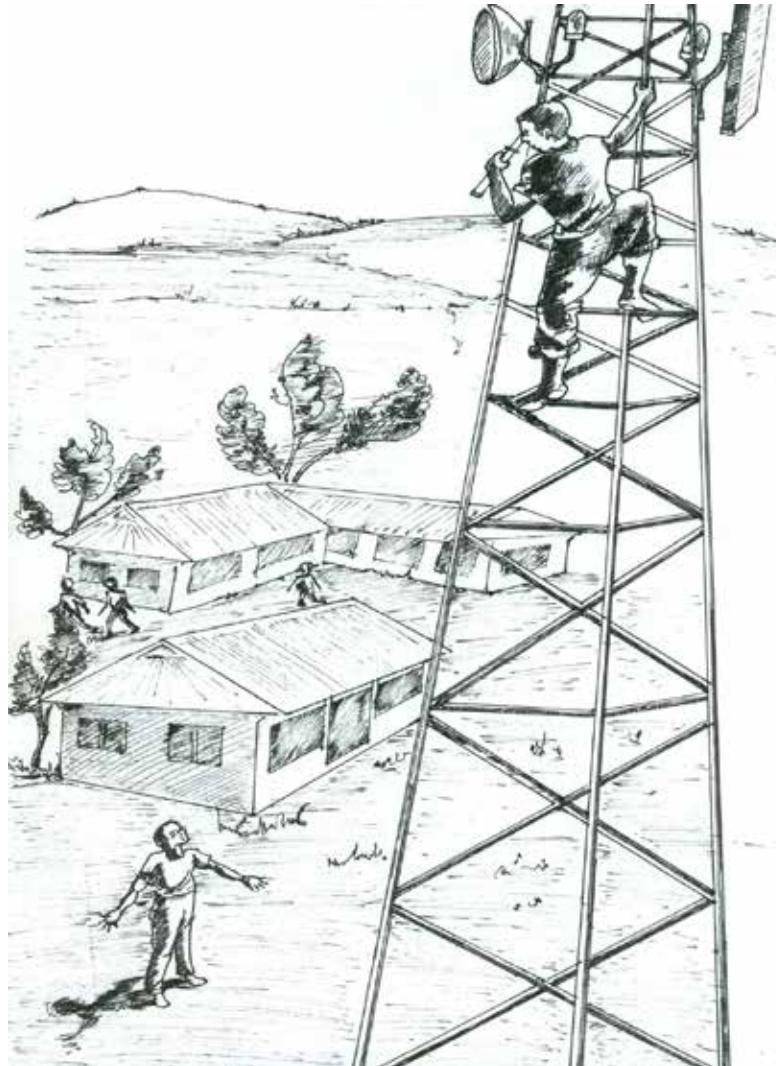
kubuuza esimu omwanya ogu erimu, nka za maapu ezirikukworeka ahu ori aha maapu.

Ezimwe ahari Apps z'amasisu nizibaasa kworeka obuhereza bw'esimu ebirikukwata aha mwanya ogu orimu, kandi ekitongore ekirikuheereza obuheereza obu nakyo nikibaasa kuheereza amakuru aga abantu abandi babaase kumanya ahu ori. (Abarikukora ahaby'okwerinda nibabaasa kuba bataine kigyendererwa ky'okukora obutatsi abarikukoresa amasimu, kwonka nibabaasa kuhendera baine obushoborozi bw'okukora eki, kandi nibabaasa kuhendera barikugambira gavumenti nari ebitongore ebirikubacondoozaho omwanya ogu abantu aba barimu.) Amasimu g'omurembe agamwe nigabaasa kuheereza obuheereza bw'okweshariraho puroguraamu ezi zaaba nizibaasa kumanya amakuru aga, enkora enungi n'okuyendeeza ahari za Apps ezirikubaasa kureeba egi, kandi oreebe ngu amakuru aga nigatungwa Apps ezi orikwesiga kandi eziine enhonga nungi kumanya ahu ori.

Omuri buri mbera, okucondooza aha mwanya tikirkumanyisa kumanya omwanya ogu omuntu arimu obwahati kyonka, nk'oku turikureeba firimu ei abapoolisi barikwirukanga aha muntu omu nguuto. Nikibaasa kirikukwata aha kubuuririza ebibuzzo ebirikukwata aha mirimo y'abantu ey'ebayaayo hamwe n'eniyikiriza zaabo, okwejumba kwabo omu mikoro, hamwe n'enkoragana nabo n'abantu abandi. Eky'okureeberaho, okucondooza aha mwanya nikibaasa kukoresibwa kumanya yaaba abantu abamwe bari omunkoragana ya rukundo, kumanya nooha owaaza omu rukiiko orumwe neinga nooha owaaba ari omu kwediima okwabaho nari kumanya omuntu ow'ekihama orikukira kugambira omunyamakuru ebi arikuhandiikaho..

### Okwihamo amasimu

Abantu baangi nibeekyengyera ngu amasimu nigabaasa kukoresibwa kureebuza abantu n'obu bakama baago baakuba batarikugakoresa kuteera nari kugagambiraho. N'ahabwекyo, abantu abarikugaaniira aha nshonga ezaakubaasa kuba zitarikwetengwa ngu zimanywe abandi nibaragiirwa kwihamo amasimu gaabo nainga obumwe kugahiraho kimwe eryanda.



Eky'okuhabura abantu kwihamo eryanda nikireetwa enhonga eya puroguraamu ezirikutuma esimu erikushusha nk'eyaarugaho baaba bagiihireho (ekabura kugira eki yaayoreka) kwonka ekaguma eriho erikukwata amaraka g'abantu abarikugamba nari erikubaasa kuteera nari kutunga esimu omuntu ondiijo yaateera haza abantu batarikubaasa kukireeba. N'ahabwекyo abantu abarikukoresa amasimu nibabaasa kubehabeihwa ngu amasimu gaabo baagaihaho kandi obwe bataagaihaho. Puroguraamu ezi zirho ahabw'ebirikukozesibwa nk'amasimu na za kompyuta ebimwe kwonka kandi nibikye ebirkumanywa ebikwatinraine n'oku birikukora hamwe n'obwingi bw'abantu abarikukoresa.

Okwihamo amasimu kiine oburemeezi bwakyo: ku abantu baangi bakuba bari omu mwanya gumwe, bakagaihaho nikimanyisa ngu abarikukoresa amasimu g'omungaro baateekateeka ku hariho enhonga

y'amaani ekyabareetera kwhaho amasimu. (Ekintu ekyo nikibaasa kuba kiri okutandika kw'akatambi ka firimu omu sineema, nari enyonyi yaaza kutsimbura kuruga aha kishaayi, kwonka nirubaasa kuba ruri orukiiko orurimu ebantu ebi abarikuhanuura baakubaire batarikwenda ngu abandi bamanye.) Ekindi ekyakubaasa kuhwera obutashohoza amakuru maingi n'okureka esimu ya buri omwe omu kishengye ekindi ahu emizindaaro y'amasimu etarikubaasa kuhurira ebi barikugamba.

### **OKUKORA OBWA MBEGA AHA MPURIZANA Z'AMASIMU G'OMUNGARO**

Abakozire amasimu g'omungaro tibarakozeise tekenologia y'okurinda abarikugakoresa obutahurikiza amasimu gaabo. Eki nikimanyisa ngu omuntu oine enkora eky'ohurikiriza amaraka naabaasa kuhurira ebirikugambirwa aha masimu ago.

Ebiro ebi embeera egyenzire neetereera kwonka ti munonga. Hati hariho tekenologia ezonguirweho aha masimu g'omungaro kugyezaho kuremesa abarikugwerera amasimu kuhurira ebi abantu barikugamba. Kwonka hoona za tekenologia ezi tizikozirwe omu mutindo gw'ahaiguru<sup>84</sup>. (Obwire obumwe eki, nikiba kikozirwe nkana ahaw'okutiinatiinisibwa kwa gavumenti erikuzibira kampuni ezirkukora amasimu obutakoresa tekenologia z'amaani!) Tekenologia ezi nizibaasa kuba ziri aha simu emwe oshanga zitari aha simu endijo nari omu ihanga erimwe ritari omu ihanga erindi kandi obumwe ziteirweho omu miringo etahikire. Eky'okureeberaho, omu mahanga agamwe, abarikukoresa amasimu tibarikwimata amapeesha agarikwikiriza enkora egi kutandika kukora nari bakoresa tekenologia eyahweire aha murembe. Ekrikumanyisa ngu nikibaasika omuntu oine ekyoma kirungi ky'okuhurikiza amaraka kandi akashoma obutumwa oburi aha simu ahaw'okuba nibiraba omu mwanya.

Nobu haraabe harikukozesibwa omutindo ogurikukirayo kuba ogw'ahaiguru omu makorero — nk'oku gurikukoresibwa omu mahanga agamwe hamwe n'amasimu agamwe — hakirih abantu abarikubaasa kuhurikiza ebirikugamba aha masimu. Ekye munonga, ebitongore by'amasimu byonka nibibaasa kukwata byona ebirikukwata aha waateera esimu nari owaayohoreza obutumwa aha simu n'ou yaateerera, obwire obu esimu yaateerwa nari

obu obutumwa bwayohorezibwa n'ebi baagamba. Amakuru aga nigabaasa kuheebwa gavumenti y'eihanga nari gavumenti ezindi ez'aheeru y'amahanga zaashaba ekitongore ky'amasimu omu butongore nangwa n'obu zaakuba zitakoreise emitendera ehikire omu butongore. Obwire obumwe gavumenti z'aheeru y'eihanga ziine oku zirkutaahirira enkora z'ebitongore by'amasimu kutunga ebirikukwata ahari mukama Sw'esimu omu kihama.

Omuringo ogurikukirayo kuba omwesigwa n'okuteekateeka ngu amasimu na za SMS tiziineho burinzi bw'obutazihurikiza abantu abatarikwikirizibwa. N'obu ebya tekenelogia biraabe nibihinduka kuruga omu mwanya kuza omugundi n'okuruga omu nkora kuhika aha ndijjo, tekenorogia z'eb'okwerinda obwire obwingi zitaine amaani kandi nizibaasa kuhingurwa obwire obwingi

Embeeraneebaasakubaey'omutaanowaabanookozesa enkora z'okurinda empurizana kuhurizana n'abantu (ti nshonga gaaba maraka nari SMS) ahaw'okuba enkora ezi nizibaasa kukoresa enkora y'okukoresa za koodi ezitarikushomwa abatarikwikirizibwa kurinda amakuru gaawe. Enkora ezi nizibaasa kuba ez'amaani kandi nizibaasa kukuheereza oburinzi obwine burungi. Omutindo gw'oburinzi obu orikutunga kuruga omu nkora eziine oburinzi nigurugiirira aha puroguraamu ezi orikukozesa kandi n'omuringo ogu zirkukoreramu. Ekiuuuo ekikuru munonga n'okumanya app narishi apurikeshoni y'empurizana yaaba neekoresa enkora y'okurinda amakuru gaawe aha kutandika n'aha kuhereruka (end-to-end encryption ) kandi haaba hariho omuringo gwona ogu abarikuheereza ogu abarikukora kusherura abarikukora ebi barikubaasa kwhaho puroguraamu egi y'okushereka amakuru ninga bakaghingura.

### **Amasimu kutunga puroguraamu ezirkugashiisha (malware)**

Amasimu nigabaasa kutunga obukooko oburikureeta puroguraamu zirkushiisha za puroguraamu ezindi ezigarimu, obumwe ahaw'okuba mukama w'esimu akabuzaabuzibwa yaataho puroguraamu y'obwinazi aha simu egoy (malware) nari ahaw'okuba omuntu akabaasa kutaahirira esimu egoy arikukoresa enhobi eri omuby'okwerinda omu puroguraamu eziri omu simu. Nk'ekora ezindi za kompyuta puroguraamu ezi z'obwinazi nizibaasa kukoresibwa okutata mukama w'esimu.

<sup>84</sup> Aftenposten, Sources: We were pressured to weaken the mobile security in the 80's, <http://www.aftenposten.no/verden/Sources-We-were-pressured-to-weaken-the-mobile-security-in-the-80s-98459b.html>, Accessed on the 09th Januar y.2014

Eky'okureeberaho, puroguraamu z'obwinazi aha simu y'omungaro nizibaasa kushoma ebi omuntu abiikire aha simu ye ebyo nk'omuntu nka SMS ezibiikirwe aha simu nari ebishushani). Ekindi neebaasa kureetera ebintu by'esimu (nk'omuzindaaro gw'esimu, kamera na GPS) kumanya omwanya ogu esimu erimu nari kwetegyereza ebigwehinguririize nari kuhindura esimu entatsi.

Tekenologia egi neekoresibwa za gavumenti ezimwe kutata abantu zirkwejunisa amasimu gaabo, kandi ereeteire abantu kwerarikira baaba nibagamba ahanshonga ezaakubaasa kubareetera oburemeezi amasimu gaabo gaaba gari omu kishengye eki barimu. Abantu abamwe enhonga egi nibagishoboorora n'okwiha amasimu omu kishenge ekindi baaba nibahanuura aha nshonga ezaakubaasa kubareetera obuzibu neinga okwhihiraho kimwe amasimu aga. (Za gavumenti zonka nizibira abantu obumwe nangwa n'abakozi ba gavumenti kureeta amasimu gaabo g'omungaro omu myanya y'eb'yobutegyeki n'okwerinda, enhonga y'amaani n'okugira ngu amasimu aga nigabaasa kuteebwamu za puroguraamu ezirikubaasa kukwata amaraka.

Enshonga endijo n'okugira ngu za puroguraamu z'obwinazi nizibaasa kutuma esimu yaashusha nk'erikurugaho, kwonka eguma eriho omu kihama (kandi erikworeka ku esimu eteine ekiraho, ekirikutuma orikoresa esimu ego yaateekateeka ku esimu etariho.) Enshonga egi ereeteire abantu abamwe kwhihaho baature z'amasimu baaba nibahanuura aha nshonga z'amaani ezi batakwenda ngu zihurirwe abandi.

#### **ESIMU Z'OMUREMBE : ENKORA N'EMITWARIZE Y'EBY'OKWERINDA AHA SIMU Z'OMUNGARO**

Eby'okwerinda ahari za kompyuta nabyo nibibaasa kukoresibwa ahabw'amasimu. Ebirikwetaagisa kukuratira birimu okuhindura oku amasimu agamwe garikukora, okukoresa enkora ezirikukira kuba nungi hamwe n'okukoresa enkora (apps) eziine eby'okwerinda. Ahaifo nituza kugaruka tushoboorore ebigyendererwa byaitu bitaano by'okwerinda nk'oku bwine akakwata n'amasimu g'omungaro ag'omurembe. Ekindi, amasimu g'omungaro ni kimwe aha bintu by'omugasho kwongyera aha mutindo gw'eb'yokwerinda kw'emirimo yaawe kandi nituza kureeba bimwe aha bintu ebyo. Kumanya ebirikukiraho aha bigyendererwa by'okwerinda ebihandiikirwe aha, shoma omu bicweka ebyabanza omu kitabo eki.

Enkora enyingi z'eb'yokwerinda zikakorwa ahabw'enkora y'esimu z'omungaro eza Android ahabwa Google (Google's mobile operating system Android,) kwonka, hariho ezindi ezongiirweho ahabwa Apple's iOS, kandi enkora za Windows Phone nizikira kuhingurwa abarikwebembera omu kukora za puroguraamu z'eb'yokwerinda ahari za kompyuta. Enkora ezi zoona ezaagambwaho, ziraho ahabw'amasimu g'ekika kya Android, kandi ahari ezindi eza iOS ezirikuza kugambwaho.

Eby'okwerinda ebyanguhi aha masimu g'omungaro

Eby'okwerinda aha masimu g'omungaro nibibaasa kushoboororwa omu bugufu omu biteekateeko by'emitaano:

#### **Kutaho enkora y'okukinga esimu yaawe (screen Lock)**

Taho enkora y'okusiba esimu yaawe kwenda ngu omuntu yaagikwata aine ekigyenderwa ky'okugigura, atakaabaasa kwigura esimu akahika ahari za puroguraamu zaawe, ebi oine omu simu, hamwe na za akaunti eziri aha simu yaawe. Enkora z'omutaano z'okurinda esimu obutaigurwa abatarikwikiriziba nizibaasa kuteebwaho: neebaasa kuba paasiwaadi, enamba y'ekihama nari patana y'okuhandiika aha simu. Aha simu ezikiri nsya nangwa neebaasa kukoresa kamera yaawe kureeba aha maisho gaawe nari kukoresa ekinkumu kyawé kwigurwa. Enkora z'okukoresa orukumu kuhandiika patana aha simutitrikuhaburwa kuzikoresa ahabw'okuba engaro nizikira kurekaho amajuta agarikuba gari aha ngaro zaitu ekirikubaasa kurahukira omuntu ondijo kureeba ahu orukumu rwawe rurikuraba.

Ekindi esimu yaawe eine enkora ezikoriirwemu ezirikworeka obwire obushemereire kurabaho (a) esimu yaawe etakagarukire kwesiba kandi, (b) ekyakubeire kiri nk'ekishumuuruzo ky'okukinga esimu kitateirwe omu nkora. Oshemereire kuteekateeka aha nshonga kandi oziteho kurugiirira aha kukunda kwawe n'okurugiirira aha kurahukirwa n'okwerinda kwawe.

Yetegyereze ngu emiringo y'okukinga esimu yaawe ni omuringo murungi gw'okubanza kwonka terikubaasa kurindira kimwe ebiri omu simu yaawe. N'ahabwekyo, oshemereire kutaho enkora y'okubuzabuza obutumwa oburi aha simu yaawe y'omurembe obutashomwa abatarikwiriziba. Reeba ahaifo kumanya ebirikukiraho.



### **Reeba ngu esimu yaawe yaaguma eri aha mutindo.**

Puroguraamu za ha simu zirimu obuzibu omu by'okwerinda nka za puroguraamu ezindi zoona. Ahabw'okwenda kugira ngu esimu yaawe yaaguma eri aha murembe na puroguraamu z'omurembe ez'okwerinda, ni kikuru munonga kuguma nooyongyera aha puroguraamu z'omurembe eziri omu simu yaawe. Enkora z'okwongyera aha murembe gw'enkora z'omusimu zaawe nizibaasa kuteekwamu kuraba omu kushwijuma ebicweka bya peegi z'enkora y'esimu yaawe.

Nobu puroguraamu z'aha simu ziraabe nizireebererwa akatare akarikuziguza (App Market) ak'orikukoresa. Kyaba nikibaasika taho enkora erikubaasa kutaho puroguraamu nsya ahari ego erikuba eriho yo yonka obwire bwahika omuntu atagiragiire.

Eky'obusaasi amasimu maingi ag'ekika kya Android nigaburwa obushagiki obutongoziibwe kandi garekyera aho kutunga obutumwa oburikukwata ahaby'okwerinda omu bwire bukye. Omu mbeera egi, eky'okukora kyonka ekirihio kwongyera ahaby'okwerinda kw'esimu yaawe n'okugura esimu y'omurembe gw'ahaiguru kukiraho.

### **Otakaateekaho Puroguraamu aha simu (APPs) ezitaguzirwe omu butare obutongoziibwe**

Puroguraamu z'aha simu nizibaasa kugira koodi ez'obwinazi ezirikubaasa kwiha amakuru kuruga aha simu yaawe. Nobu kiraabe nikibaasika kutongoza za puroguraamu ezimwe aha Google Play store nari ahari Apple App store, oshemereire kuguma aha myanya etongoziibwe y'okutungiraho za puroguraamu z'aha simu nk'ezo ibiri hamwe n'emyanya endijo etari mingi nka Amazon Store, Samsung Store, hamwe na F-Droid.<sup>85</sup> Emyanya etatongoziibwe kuguraho puroguraamu ezi neebaasa kukuhwera kutunga app nari apulikeshoni za busha aha simu yaawe ezirikushashurirwa sente aha myanya endijo ey'okuziguraho, kwonka ijuka ngu noobaasa kuba nootunga puroguraamu ez'obwinazi ezirikushiisha esimu yaawe (malware) amakuru agari aha simu yaawe.

Aha nshonga niyo emwe, n'eky'omugasho munonga kumanya za app nari apulikeshoni eziri aha simu yaawe kandi okeihaho app nari apurikeshoni ezi otarikwetegyereza nari ezi otakizosa. Eki nikibaasa kuuhwera kwongyera aha kwanguha kwa za puroguraamu eziraha simu, kikyendeeze aha kabi k'obutarinda ebihama byawe hamwe n'omuhendo gwa za puroguraamu ezi orikwetenga kuta aha simu kuruga aha intaneti.

### **Kwihihaho Bluetooth**

Kurugiirira aha kika ky'esimu yaawe, Bluetooth neebaasa kuguma eriho obwire bwona. Eki nikibaasa kuta esimu yaawe omu kabi k'okutunga za puroguramu ezaakubaasa kugishiisha. Esimu enyingi ez'omutindo gw'ahaiguru niziba nizenda ku otaho Bluetooth ahabw'obwire bukye reero ohamye enkoragana y'esimu n'esimu endijo ei waakuba oine eki orikwenda kwohorezaho nari orikwenda ku eyohoreza aha simu eyaawe kuraba omu kwimata enamba ei murikukoresa hamwe. .

### **Eby'okurinda kwa data aha simu yaawe**

Esimu z'omurembe musyaho nizikuheereza tekenorogia y'okurinda amakuru zirikugooohoreza zigateire omu muringo ogutarkubaasa kushomwa abantu abataikiriziibwe. Yetegyereze ekicweka ky'eby'okwerinda aha simu yaawe kureeba eki kyaba nikibaasika. Ijuka ngu enkora egi yaaba etario, abatarikwikirizibwa nibabaasa kuraba aha paasiwaadi ey'okwigura omutwe gw'esimu yaawe (screen lock) barikushoma ebiri ahu esimu yaawe erikubiika amakuru (hard drive) barikukoresa ekyoma ky'omutaano.

Waaba oine enkora y'okurinda amakuru aha simu yaawe (full disk encryption) enamba, nari patana yaawe y'aha simu nigwo gukuba guri omuhanda gwonka gw'okuhika ahabintu ebiri omu simu yaawe. Esimu yaawe neebaasa kuba eriho enkora ezindi ezirikugikinga ezirkuremesa omuntu orikwenda kugitaahirira bwanyima y'okugyezaho emirundi erikuba eshazirweho. Noobaasa kutaho enkora y'okushangura ebiri aha simu yaawe byona bwanyima y'okugyezaho kugiigura emirundi mingi.

Esimu yaawe etaine tekenologia y'okubiika amakuru omu muringo ogurikuremesa abataikiriziibwe kugashoma, noobaasa kurinda data yaawe orikukoresa za puroguraamu. Noobaasa kushereka data orikukoresa za puroguraamu. Puroguraamu ezimwe ez'okurinda amakuru aha simu yaawe nka Silence<sup>86</sup> (encrypts SMS) hamwe na CameraV<sup>87</sup> (encrypts photos).

### **Eby'okwerinda ahari data erikuraba ahari intaneti.**

Esimu neekoresibwa ahabw'okuhurizana, kwonka nk'oku twagamba aha ruguru amaraka na za SMS aha masimu g'omungaro nibibaasa kuhurikizibwa nari kushomwa abandi. Oshemereire kukoresa puroguraamu za intaneti ahabw'empurizana zaawe aha simu.

Obuheereza nka Skype na Facebook Messenger nibiza kurinda empurizana zaawe abantu abaakubaasa kuzitaahirira omu ihanga ryawe, obutumwa bwawe nibubaasa kubiikwa kandi bushomwe ahari za kompyuta

<sup>85</sup> F-Droid is an alternative app market which only hosts free and open source apps. Learn more and download the market app at [www.f-droid.org](http://www.f-droid.org), Accessed on the 9th Februar y 2017

<sup>86</sup> Silence, Need some privacy, <https://silence.im/>, Ac- cessed on the 9th Februar y 2017

<sup>87</sup> Google, CameraV: secure visual proof, <https://play.google.com/store/apps/details?id=org.witness.informacam.app> , Accessed on the 9th Februar y 2017

z'ekitongore ekirikukora aha buheereza obu. Obuheereza obwakozirwe ahaby'okwerinda burimu Signal obwakozirwe Open Whisper Systems<sup>88</sup> (aha Android na iPhone) nooteera gye amasimu kandi otunga obutumwa aha simu ahonaaho.

Kwerinda kureeba ahu orikutaayaayira hoona ahari intaneti, n'okusherekwa omwanya ogu orimu nari okwesherekwa kukumanya iwe wenka ahari za webusayiti noobaasa kukoresa VPN y'aha simu yaawe. Psiphon<sup>89</sup> ni puroguraamu ya VPN rurangaanwa eyaakozirwe abarikurwanirira empinduka omuby'obutegyeki abarikwenda kwerinda obutareebwa oku barikukoresa intaneti. Omuringo ogundi ni Betternet.<sup>90</sup>

Opera nayo neehereza obuheereza bwa VPN app obwa busha aha Android na iPhones.<sup>91</sup> Ekindi noobaasa kushaba kutunga VPN y'okushashurira erikukuheereza erikurahusya obuheereza bwave bwa intaneti.

Tor ni nka VPN kwonka nayo neesherekwa eiziina ryawe aha neetiwaaka ori aha neetiwaaka ei orikugyezaho kwetantara. Tor eri aha smartphone yaawe kuraba omu apps ibiri ezirikumanya nka Orbot<sup>92</sup> na Orweb.<sup>93</sup>

#### Eby'okwerinda ahari za akaunti

Esiimu yaawe y'omungaro nayo neebaasa kukuhwera kurindaza akauntizaawe. Orikurabaomunkoray'okukoresa emiringo ebiri y'okworeka ku ari iwe mukama wa akaunti zaawe eziri aha intaneti, nooza kutunga obutumwa aha simu obwire bwona kompyuta nari esimu endijo yoona yaakoressibwa kwigura akaunti yaawe yoona. Omu muringo ogu, omwinazi nobu yaakwiba paasiwaadi yaawe tarikuza kubaasa kwigura akaunti yaawe arikwejunisa paasiwaadi yonka. Waaba nookira kutambura kukora neetiwaaka yaawe ey'omu ihanga ey'amasimu g'omungaro orikwejunisa enkora y'okukoresa neetiwaaka yaawe ori aheeru y'eihanga (roaming) oshemereire kuta aha simu yaawe puroguraamu y'okukoresa emiringo ebiri kuhamya ku ori mukama wa akaunti (Authenticator App). Hariho Google Authenticator ababw'amasimu g'ekika kya Android<sup>94</sup> hamwe na iOS.<sup>95</sup> Puroguraamu egi neekwohorereza obutumwa, tinshonga ahu orikuba ori hoona omunsi kandi torikwetenga kuba ori aha intaneti kutunga obutumwa obu. Facebook neekwikiriza kwekorera za koodi kuruga omu puroguraamu zaayo

88 Open whisper systems, <https://whispersystems.org/>, Accessed on the 9th February 2017

89 Psiphon, keeping the web world wide, <https://psiphon.ca>, Accessed on the 9th February 2017

90 Betternet, Online security and privacy for all devices and platforms, <https://www.betternet.co>, Accessed on the 9th February 2017

91 Opera, Unblock the web for free, <https://www.opera.com/apps/vpn>, Accessed on the 9th February 2017

92 Guardian Project, Orbot, Tor for Android <https://guardianproject.info/apps/orbot/>, Accessed on the 9th February 2017

93 Guardian Project, Orbot, Tor for Android <https://guardianproject.info/apps/orbot/>, Accessed on the 9th February 2017

94 Google, Play, Google authenticator, <https://play.google.com/store/apps/details?id=com.google.android.apps.authenticator2&hl=en>, Accessed on the 9th February 2017

95 <https://itunes.apple.com/en/app/google-authenticator/id388497605?mt=8>

Omuringo gw'omugasho munonga gw'okuhwera kumanya puroguraamu yaawe eya SMS yaaba nekuheereza oburinzi kandi etarikushohoza ebintu byawe omu rwatu ni Electronic Frontier Foundation's Secure Messaging Scorecard.<sup>96</sup>

#### Okwerinda omu mirimo

Oihireho enhonga ez'okwerinda ezaagambwaho, esimu yaawe neebaasa kukuhwera kukora emirimo yaawe gye. Ahaifo aha hariho zimwe ahari za puroguraamu.

**Panic Button**<sup>97</sup> ni app narishi apurikeshoni nari puroguraamu erikubaasa kuzaho waayimata emirindi mingi aha ipeesha ry'okutaho esimu. Yaaheza kuzaho, enkora egi neeza kwohoreza SMS aha bantu abatoorainwe erikworeka obutumwa obubaire bwahandiikirwe kandi nangwa n'omwanya ogu orimu (GPS). Egi ni puroguraamu y'okurwanisa kubura kandi eri aha masimu g'ekika kya Android.

**CameraV**<sup>98</sup> ni puroguraamu ya kamera hamwe na video y'okwahoreza obutumwa oburimu media data hamwe na metadata nka; omwanya ogu orimu, omurongooti gwa wifi ogwehinguririize omwanya ogwe hamwe n'okworeka amaani ga Bluetooth kukora bwa obuhame obutarikubaasa kuhakanisibwa omu bishushani. Enkora egi ekakorwa ababw'okushwijuma kandi ekareeba ebishushani byaba bihikire bitagingiriire kwenda ngu bibaase kureetwa kandi biikirizibwe nk'obwa mushinja omu mbuga z'amateeka. Enkora egi eri aha simu za app ya Android.

**Mobile Martus**<sup>99</sup> ni puroguraamu y'aha simu y'okukungaanya amakuru nari puroguraamu erikuhika ah'eirundaaniro ry'ebihandiiko ebya database Martus.<sup>100</sup> Puroguraamu egi neehwera orikukoresa esimu kwohoreza ripoota y'ebi'okwerinda reero 'okugyohoreza, ripoota egi eshanguka omu simu ahonaaho ripoota ego yaaheza kwohorezbwa. Puroguraamu eriho ababw'amasimu g'ekika kya Android.

**Umbrella**<sup>101</sup> ni puroguraamu y'okweyegyesa eya busha eri aha masimu g'ekika kya Android. Neegamba aha bintu bingi ebirikukwata ahaby'empurizana y'ebiyamasimu na za kompyuta, entebeekanisa n'ebiyokerinda omu muringo murungi aha masimu. Enkora egi okwetegyereza n'okushwijuma omu kuteebekanisa n'okuta omu nkora enkora ezeeyongirie kushemezibwa ez'obyokwerinda. Yega kuruga omu Security First.<sup>102</sup>

96 Electronic Frontier Foundation, Secure messaging scorecard <https://www.eff.org/securesms-scorecard>, Accessed on the 9th February 2017

97 Panic Button, Turns your mobile into a secret alarm, <https://panicbutton.io>, Accessed on the 9th February 2017

98 Google play, CameraV secure visual proof <https://play.google.com/store/apps/details?id=org.witness.informacam.app&hl=en>, Accessed on the 9th February 2017

99 Google play, Mobile Martus, <https://play.google.com/store/apps/details?id=org.martus.android&hl=en>, Accessed on the 9th February 2017

100 Martus, Information is power, <https://www.martus.org>, Accessed on the 9th February 2017

101 Google play, Umbrella security made easy <https://play.google.com/store/apps/details?id=org.secfirst.umbrella>, Accessed on the 9th February 2017

102 <https://secfirst.org>



# Ebihandiiko eby'okushoma

Endagiiriro egi n'entandikwa kwonka. Yongyera kwega ebindi otungye endagiiriro ezirukiraho omu bihandiiko ebi:

**Security in a Box<sup>103</sup>** – Emitwe erimu obukodyo hamwe n'endagiiriro ezirikworeka oku omuntu yaakubaasa kukoresa puroguraamu eziri omu katabo aka. Reeba endagiiriro zaabo z'abarikurwanirira obugabe bw'abantu obukwatireine n'obuhangwa bw'ensi (African Environmental Rights Defenders<sup>104</sup>) hamwe n'abarikweteerana omu by'obumubonano omu miringo ey'abantu baingi batarikwikirizana nayo nk'ey'ebitingwa (Sexual Minorities).<sup>105</sup>

**Surveillance Self-Defense<sup>106</sup>** - Emitwe mikuru aha kwerinda okukorwaho obwa mbega n'enkora ezirukuragiira enkoresa ya za puroguraamu. .

**Digital First Aid Kit<sup>107</sup>** - Endagiiriro erikworeka eki waakubaasa kukora ahari kompyuta nari esimu yaaheza kutahirirwa za puroguraamu ezirkugishiisha.

**SaferJourno<sup>108</sup>** - Endagiiriro y'okushomera ahari kompyuta nari esimu ey'okutendeka abashaki b'amakuru aha bikwatiraine n'ebi'okwerinda.

**Level-Up<sup>109</sup>** - Omushomo gw'aha kompyuta ogw'okushomesa abarikutendeka abandi aha bikwatiraine n'ebi'okwerinda.

**SAFETAG<sup>110</sup>** – Enkora ya kompyuta ey'okushwijuma eby'okwerinda ey'abatendekirwe omu by'okwerinda.

**VirusTotal<sup>111</sup>** - Scan file nainga URL link ya puroguraamu ezirkushiisha kompyuta (malware)

**The Digital First Aid Kit<sup>112</sup>** - Enkoragana y'ebitongore birikurwanirira obugabe bw'abantu omu bya kompyuta

**Umbrella<sup>113</sup>** ni puroguraamu ey'omuntu arikubaasa kukoresa kweyegyesa etarikushashurirwa eri aha masimu g'ekika kya Android.

103 Security in a box, Digital security tools and tactics, <https://securityinabox.org/en> , Accessed on the 9th 2017

104 Security in a box, Tools and tactics for environmental rights defenders in Sub-Saharan Africa <https://securityinabox.org/en/eco-rights-africa> , Accessed on the 9th Februar y 2017

105 Security in a box,Tools and tactics for the LGBTI community in Sub-Saharan Africa <https://securityinabox.org/en/lgbti-africa> , Accessed on the 9th Februar y 2017

106 Electronic Frontier Foundation, Sur veillance self defense, <https://ssd.eff.org/> , Accessed on the 9th Februar y 2017

107 Digital Defenders Par tnership,The digital first aid kit, <https://w w w.digitaldefenders.org/digitalfirstaid/> , Accessed on the 9th Februar y 2017

108 SaferJourno, Digital security resources for media trainers, <https://saferjourno.internews.org/> , Accessed on the 9th Februar y 2017

109 LevelUp, Resources for the global digital safety training community, <https://w w w.level-up.cc/> , Accessed on the 9th Februar y 2017

110 Safetag, A security audit frame work,Project of Internew, <https://safetag.org/> , Accessed on the 9th 2017

111 Virus total, Analyzes suspicious files and URLs, <https://w w w.virustotal.com/> , Accessed on the 9th Februar y 2017

112 Digital Defenders Par tnership,The digital first aid kit, <https://w w w.digitaldefenders.org/digitalfirstaid/>, Accessed on the 9th Februar y 2017

113 Google play, Umbrella securit y made easy <https://play.google.com/store/apps/details?id=org.secfirst.umbrella> , Accessed on the 9th Februar y 2017

Purojekiti y'okurwanirira abarikurwanirira obugabe bw'abantu (omuri burugweizooba bwa Africa) eine ekigyendererwa ky'okwongyera amaani omu mirimo y'abarikurwanirira obugabe bw'abantu omu byanga byona ebya Africa kuraba omu kukyendeeza ahakabi k'okutuntuzibwa n'okwongyera obushoboorozi bwabo omu kurwanirira obugabe bw'abantu.

DefendDefenders n'ekitebe ekikuru ekya EHAHRD-Net, enkoragana erikubuganisa ebitongore ebiriku hingura 75 ebirukukora ahaby'obugabe bw'abantu omu mahanga ikumi na rimwe omuri burugweizooba bwa Africa hamwe n'ekicweka omu matemba ga burugw'ezooba bwa Africa: Burundi, Djibouti, Eritrea, Ethiopia, Rwanda, Somalia (hamwe na Somaliland), South Sudan, Tanzania, na Uganda.

 [www.defenddefenders.org](http://www.defenddefenders.org)

 +256 393 265 820

 [info@defenddefenders.org](mailto:info@defenddefenders.org)

 @ehartrdp

 / defenddefenders

