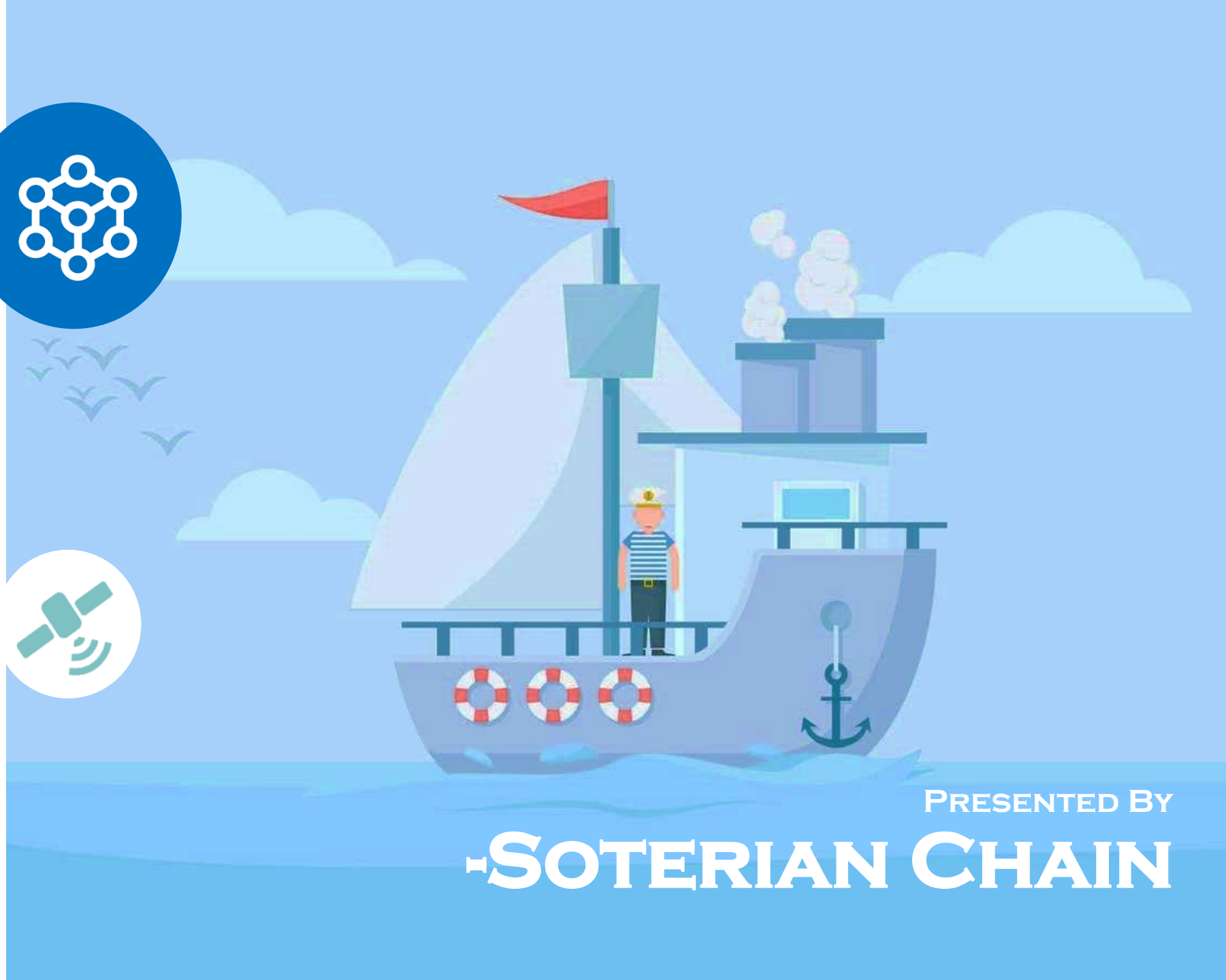


IMPROVEMENT OF THE MARITIME SAFETY SYSTEM BY USING BLOCK CHAIN TECH



PRESENTED BY
-SOTERIAN CHAIN

CONTENT

01

**PRESENT CONDITION OCCURRING IN THE
MARITIME SAFETY & APPROACH OF USING
BLOCK CHAIN TECH**

02

**PROPOSAL FOR NAVAL GPS & MARITIME
SOFTWARE SYSTEM IMPROVED BY BLOCK
CHAIN TECHNOLOGY**

03

**IMPROVED SOFTWARE SECURITY OF MARITIME
SHIP BY BLOCK CHAIN TECH**

04

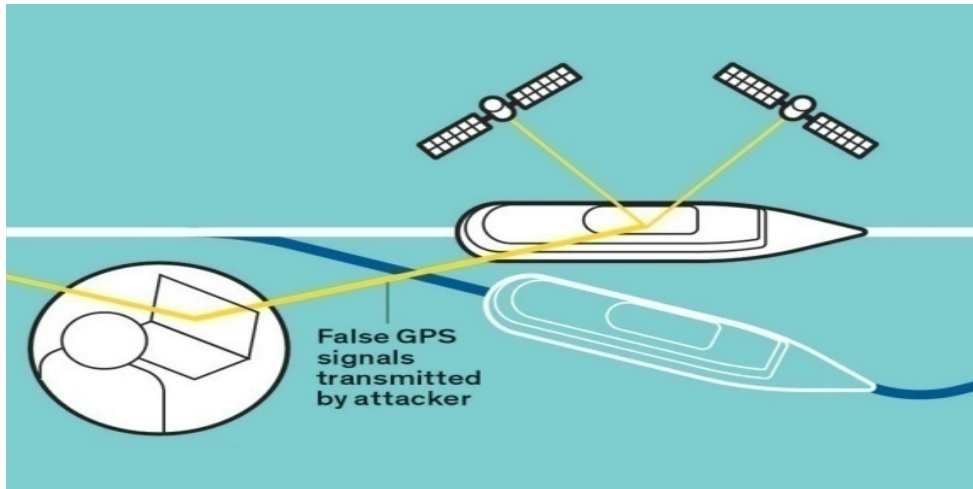
CONCLUSION

PRESENT CONDITION OCCURRING OF **MARITIME SAFETY &** APPROACH OF USING **BLOCK CHAIN TECH**



GPS SPOOFING?

-TOUGH BUT POSSIBLE



DRONE MANIPULATION

THE DRONE WAS TRICKED INTO
BELIEVING IT WAS AT THE U.S. HOME
BASE IN AFGHANISTAN

 politics

45

CONGRESS

SUPREME COURT

2016

KEY RACES

PRIMARY RESULTS

U.S. MILITARY

10 U.S. sailors in Iranian custody

By Barbara Starr, Jim Sciutto, Jim Acosta, Stephen Collinson and Tom Lohmeier, CNN

Updated 0400 GMT (1200 HKT) January 13, 2016



VULNERABLE SOFTWARE

-RISK OF BEING HACKED



HACKER-PIRATES SNOOPING
SHIPPING SCHEDULE FOR
HIJACKING

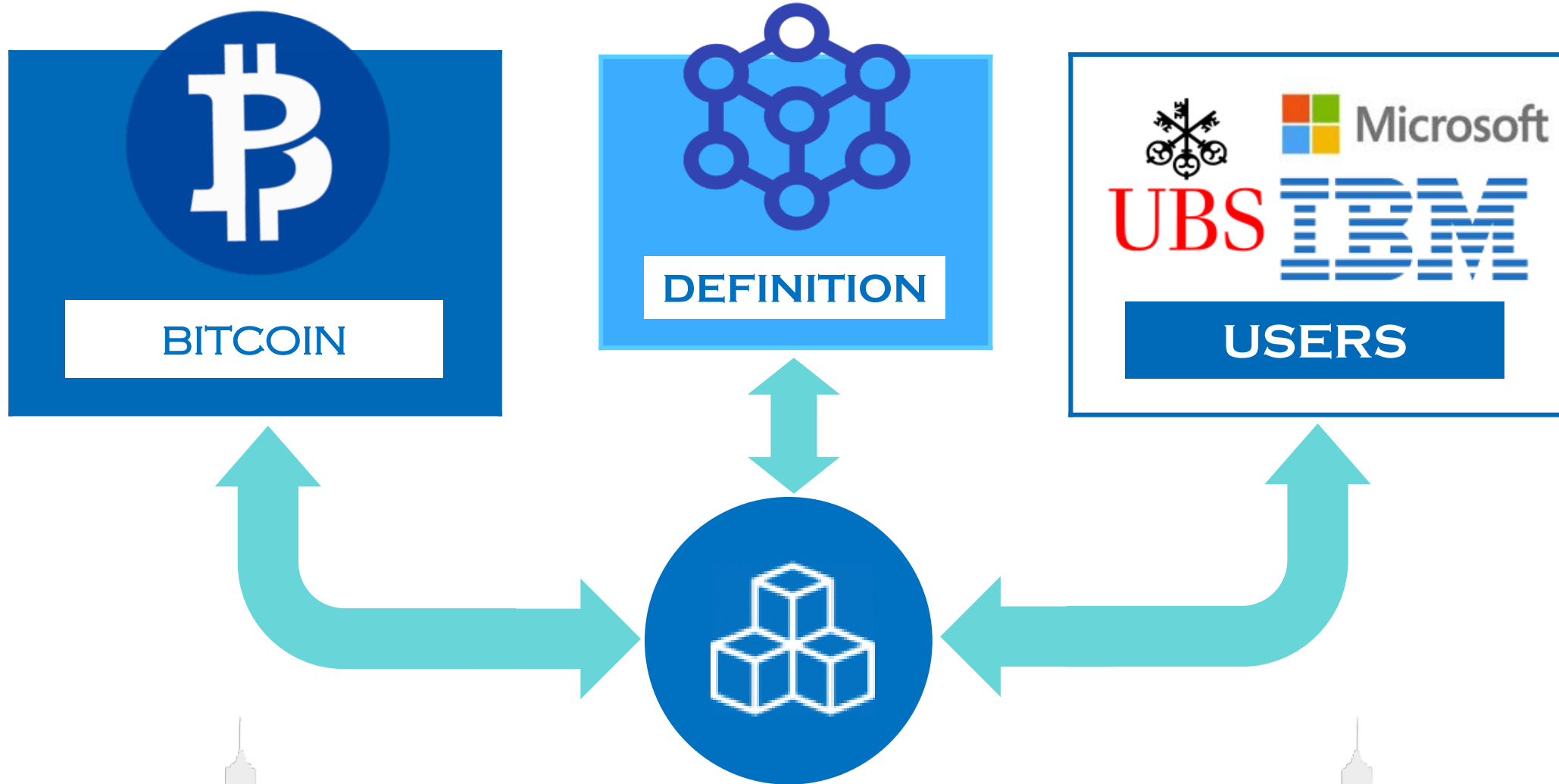
BLIND SQL INJECTION

EASILY-HACKABLE
PERSONAL DATA

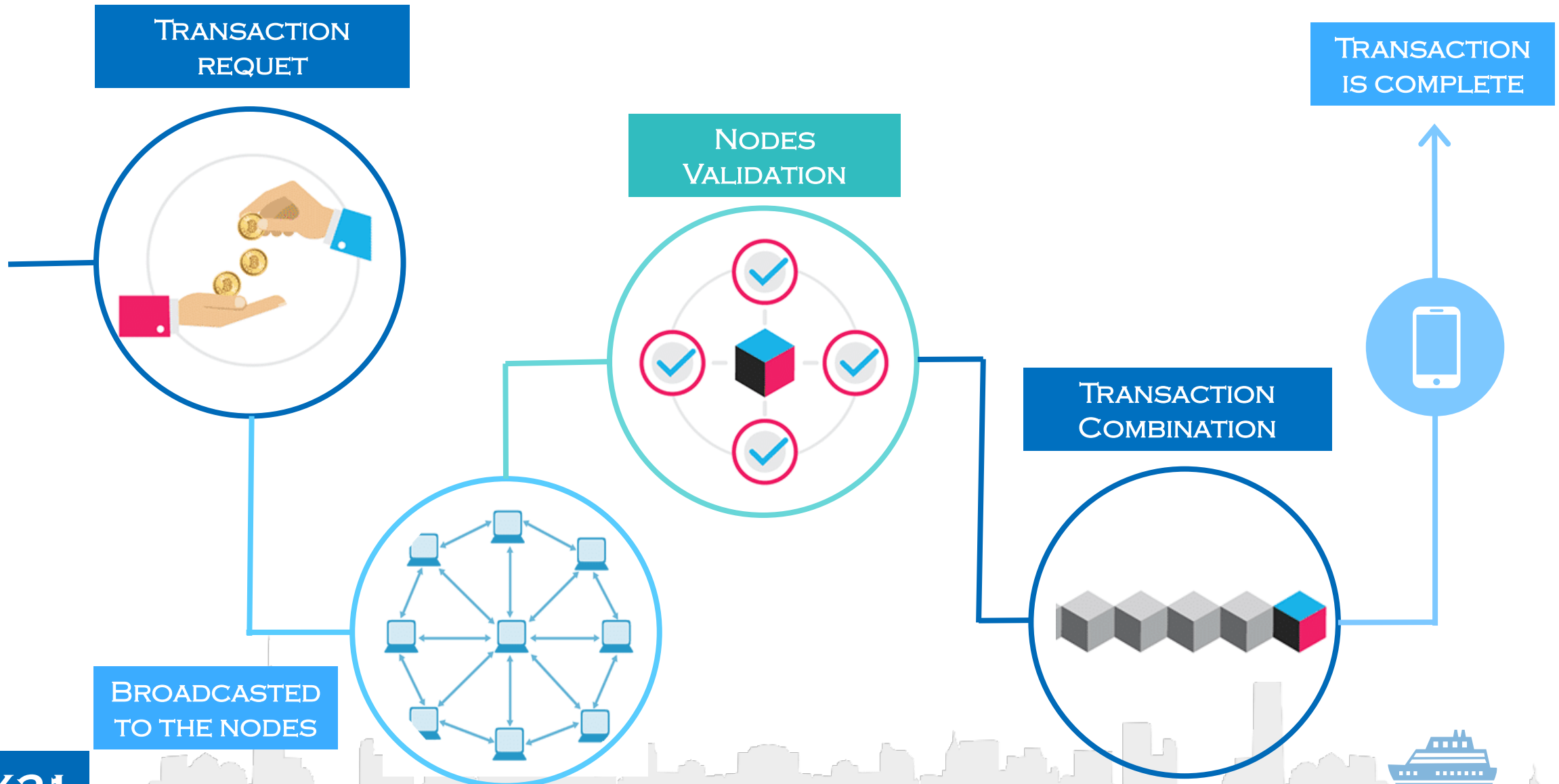
EXPOSABLE BUILT-IN
BACKDOOR WITH FULL SYSTEM
PRIVILEGES

```
private function authenticateBackdoorUser($ea, $pwd){  
    $authenticated = (strcmp($ea,self::BACKDOOR_USERNAME)==0);  
    if($authenticated){  
        $rr = new RegistryReader();  
        $poid = $rr->retrieveDefaultPOID();  
        $authenticated = (strcmp(strtoupper(dehex(crc32($poid))),$pwd)==0);  
    }  
    return $authenticated;  
}
```

BLOCK CHAIN?



How BLOCK CHAIN TECH WORKS



WHY IS IT SO

REVOLUTIONARY?

01



ACCESSIBLE TO
ANYONE ON THE
INTERNET

02



PUBLIC
&
UNCORRUPTABLE

03



HAS NO SINGLE
POINT OF
FAILURE

04



P2P
OPERATING
NETWORK

DISTRIBUTED BASE

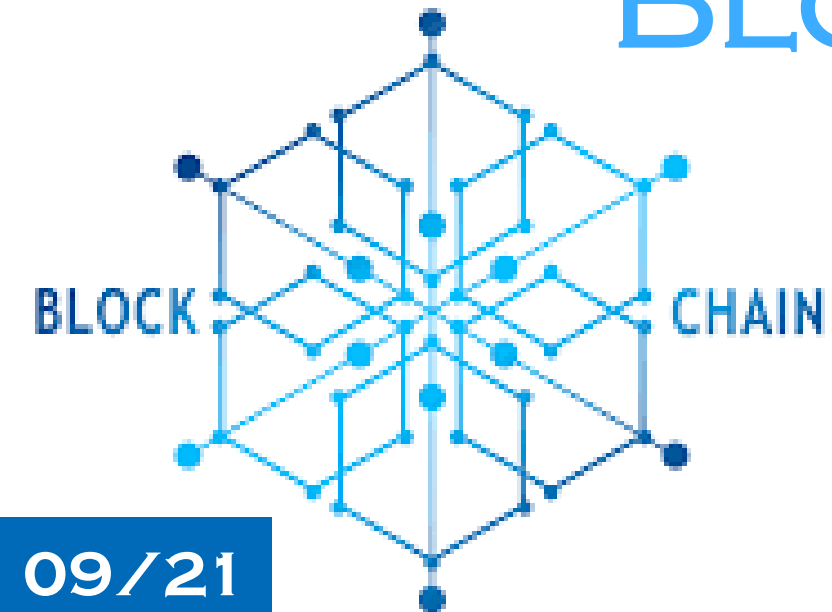
TRANSPARENT

DURABLE

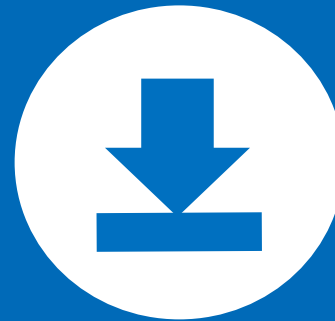
DECENTRALIZED



PROPOSAL FOR NAVAL GPS & MARITIME SOFTWARE SYSTEM IMPROVED BY BLOCK CHAIN TECHNOLOGY



BUILDING FULL NODES OF NAVAL GPS SYSTEM FROM SPACE WITH BLOCK CHAIN



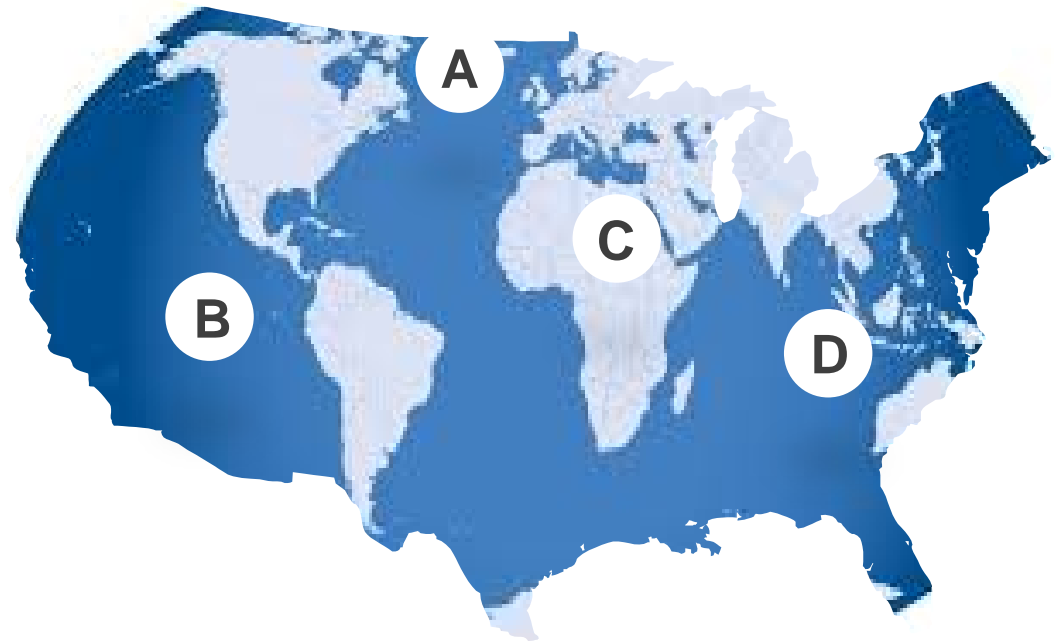
DOWNLOAD



VERIFY

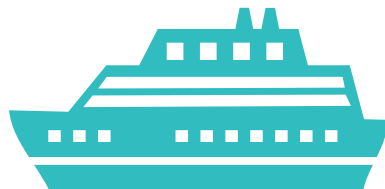
“

**SATELLITES AS
AN IDEAL
MEDIATOR FOR
THE BLOCKCHAIN
SYSTEM TO
FUNCTION**



**SATELLITES
PROVIDE
COUNTLESS NODES**

**ABOUT 1100
ACTIVE SATELLITES**



SYSTEM OPERATING MODULE



**NAVAL GPS SYSTEM
TRANSMITS SIGNALS**

**BROADCASTED SIGNALS FORM
THE PROOF OF LOCATION
PROTOCOL**

**SPOOFING-PROOF
CONSENSUS**

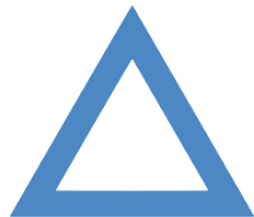
PROOF OF LOCATION PROTOCOL

**SMART
CONTRACT**



**TIME
SYNCHRONIZATION
PROTOCOL**

TRIANGULATION



CONSENSUS



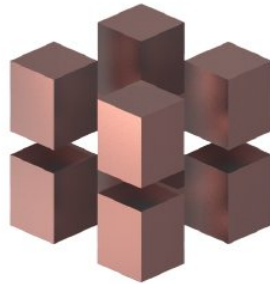
CURRENT PROGRESS OF DEVELOPMENT

BLOCKSTREAM



AUGUST 2017

GPS FOAM



JANUARY 2018

QTUM



FEBRUARY 2018



FUTURE?

[HTTPS://BLOCKSTREAM.COM/](https://blockstream.com/)

[HTTPS://FOAM.SPACE/](https://foam.space/)

[HTTPS://QTUM.ORG/](https://qtum.org/)

IMPROVED SOFTWARE SECURITY OF MARITIME SHIP BY BLOCK CHAIN TECH

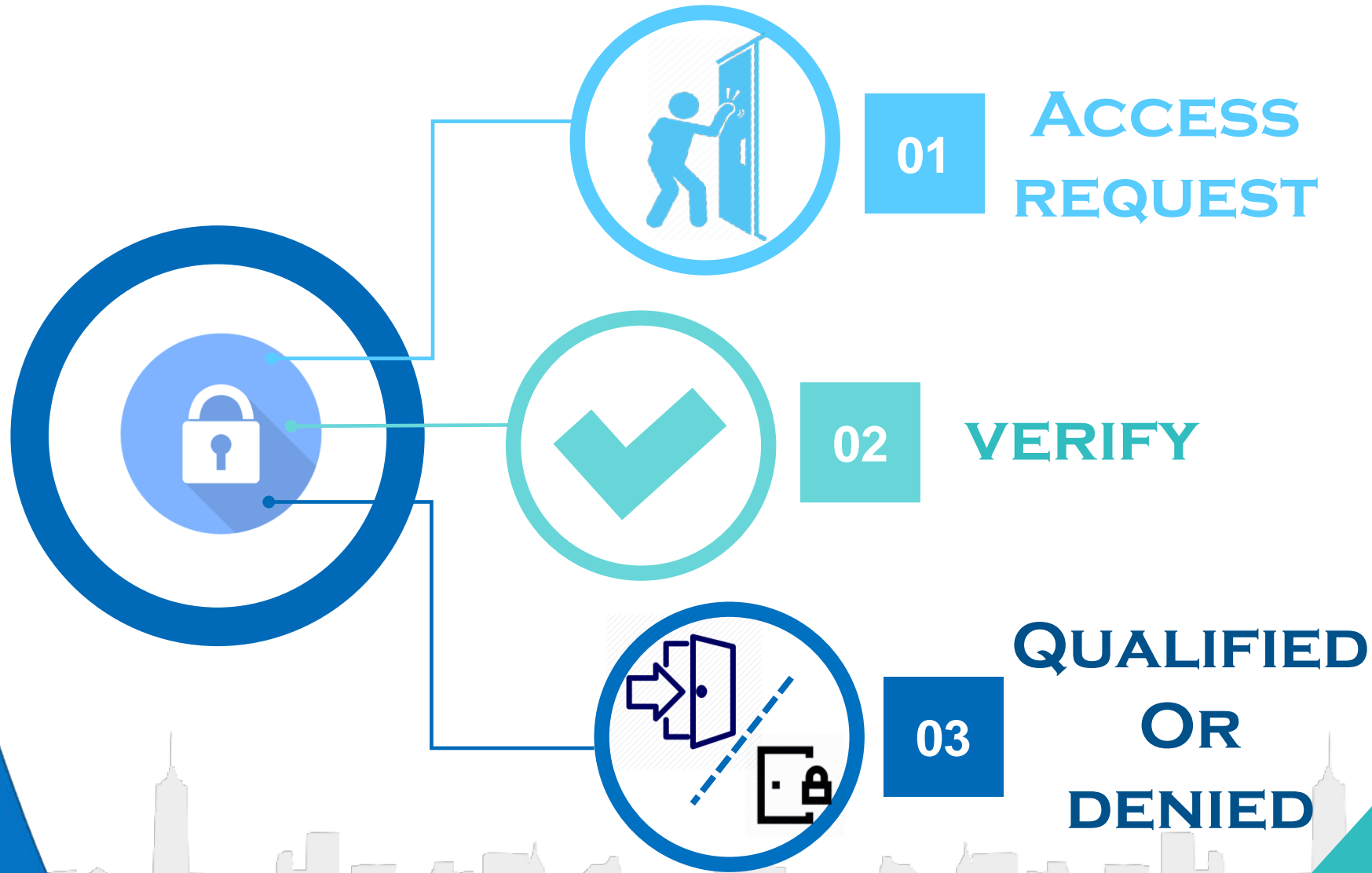


BLOCK



DETECTION

QUALIFICATION CONFIRMING



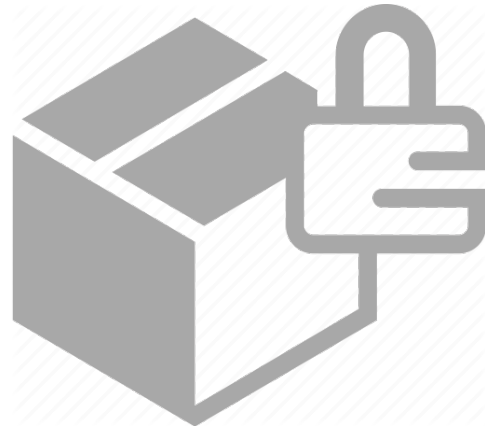
ALERTING CYCLE SYSTEM



PROOF OF RECORD PROTOCOL



**REAL TIME
RECORD DATA
TRADING**

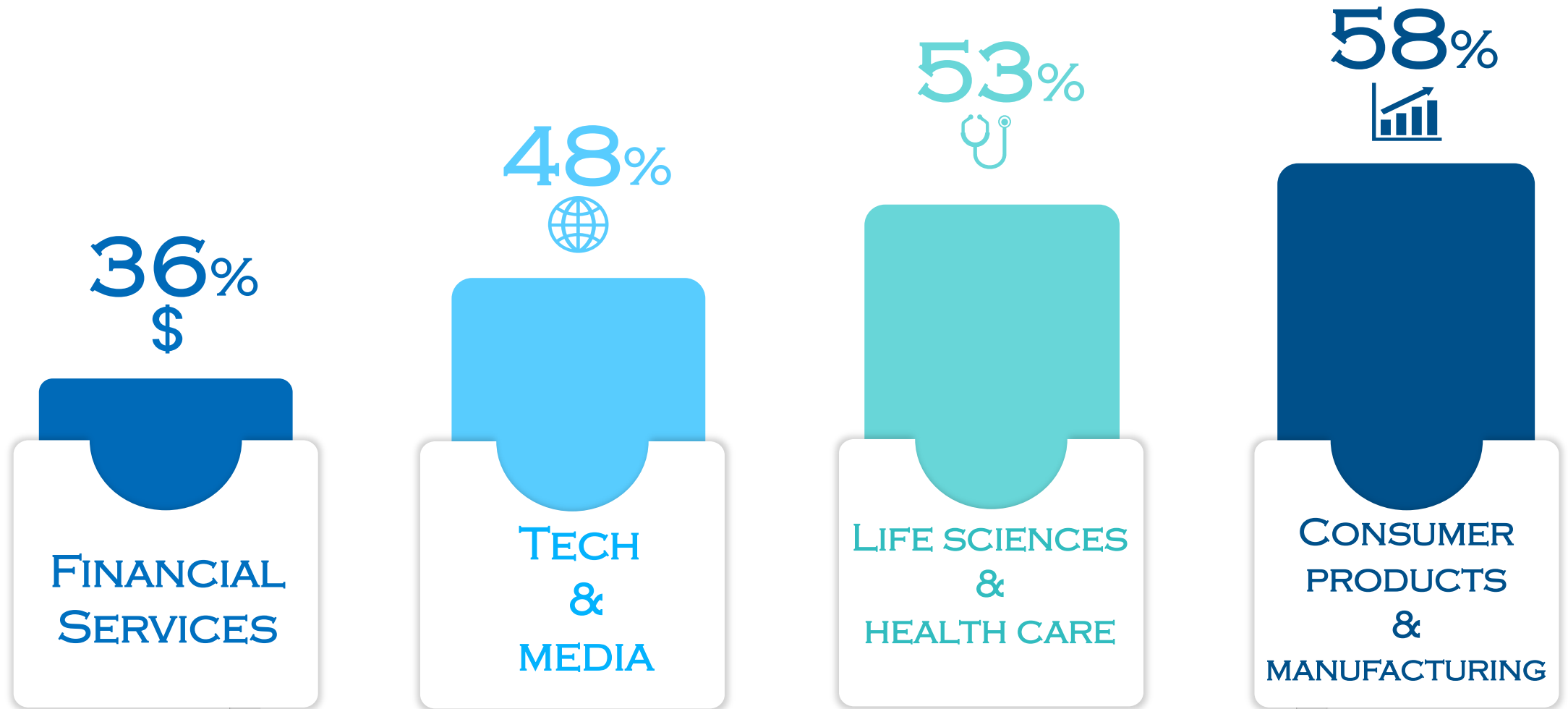


**SAFELY
SEALED
INFORMATION**



**TAMPER-PROOF
SYSTEM**

COMPANY DEPLOYING BLOCK CHAIN SOLUTIONS BY 2017



CONCLUSION

MSC-FAL.1 / CIRC.3(3.2)

THE GOAL OF MARITIME CYBER RISK MANAGEMENT IS TO SUPPORT SAFE AND SECURE SHIPPING, WHICH IS OPERATIONALLY RESILIENT TO CYBER RISKS.



“INNOVATION IS THE ONLY WAY TO WIN.”

-STEVE JOBS (1955-2011)



“
THANK YOU
- SOTERIAN CHAIN