



RFID JOURNAL LIVE!

SEPTEMBER 26 - 28, 2021
PHOENIX CONVENTION CENTER | PHOENIX, AZ

Designing Your RFID Solution

Kevin Berisso, Ph.D.

University of Memphis



Track Schedule Agenda



Time	Topic	Speaker
12:15 pm – 1:00 pm	Linking RFID to Inventory Management Best Practice	Pedro Reyes
1:45 pm – 2:30 pm	Targeting the Correct RFID Technology for the Right Project	Kevin Berisso
2:30 pm – 3:15 pm	Designing Your RFID Solution	Kevin Berisso
3:15 pm – 4:00 pm	Building Your RFID Business Case	Pedro Reyes



THE UNIVERSITY OF
MEMPHIS®

Automatic Identification Lab



Education Advocation Tech Transfer



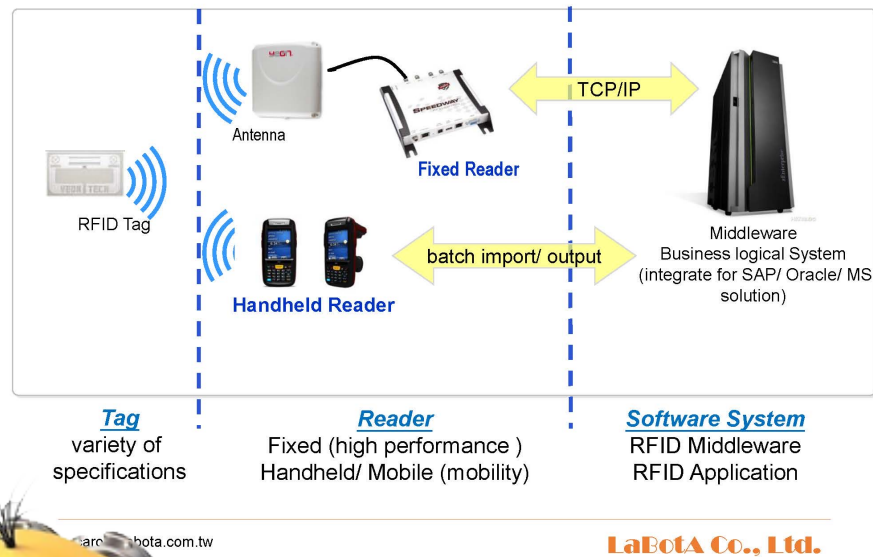
THE UNIVERSITY OF
MEMPHIS®
Automatic Identification Lab

RFID
JOURNAL
LIVE!

SEPTEMBER 26 - 28, 2021

That's the
wrong 1st
question!

UHF RFID System : Tag/ Reader/ Software



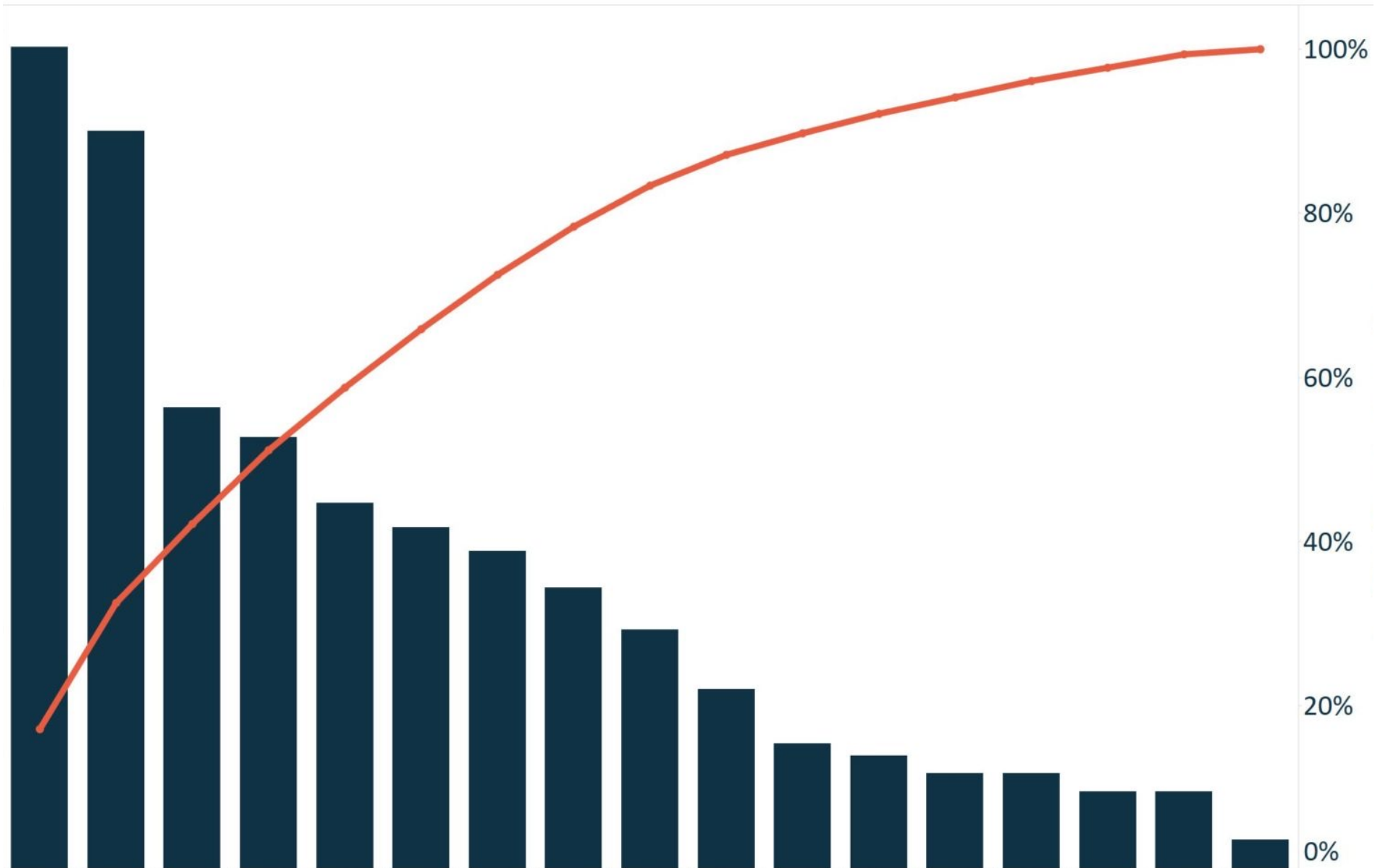
How do I
design my
system?



THE UNIVERSITY OF
MEMPHIS
Automatic Identification Lab

RFID
JOURNAL
LIVE!

SEPTEMBER 26 - 28, 2021



THE UNIVERSITY OF
MEMPHIS
Automatic Identification Lab

RFID
JOURNAL
LIVE!

SEPTEMBER 26 - 28, 2021

Sense

Notify

Track

Count

Locate

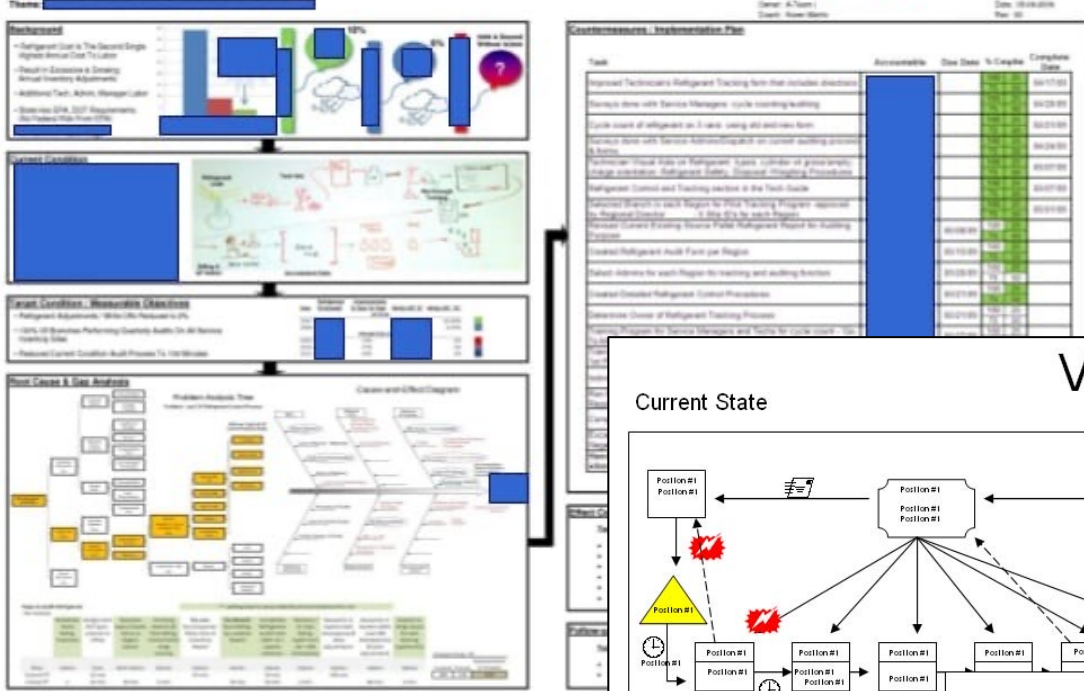
Identification

Authenticate



Sample A3 Report

Plan Do, Study, Adjust

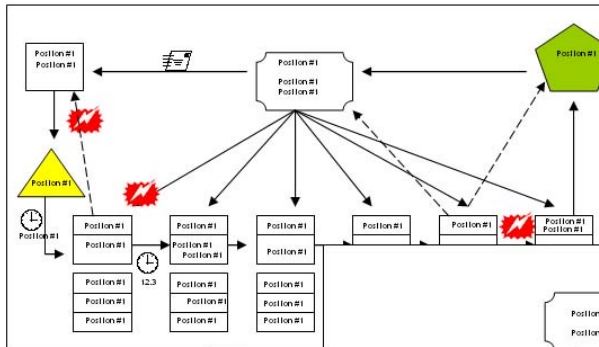


Gemba Walk Checklist

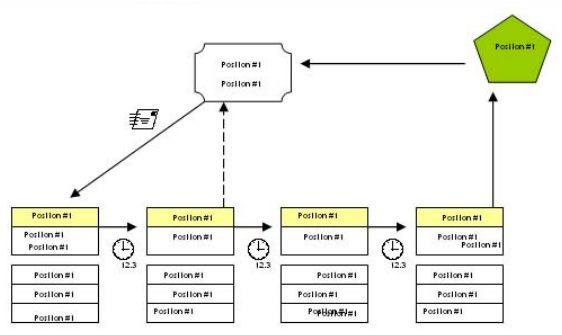
- ☒ What are you currently working on?
- ☒ Is there an established process for this type of work?
- ☒ Do you have any problems with the established process?

Value Stream Mapping

Current State



Future State





AsReader



RFID SCANNER

Scan all items in a whole store quickly







THE UNIVERSITY OF
MEMPHIS
Automatic Identification Lab

RFID
JOURNAL
LIVE!

SEPTEMBER 26 - 28, 2021

Tagging

Hardware

Buy-in

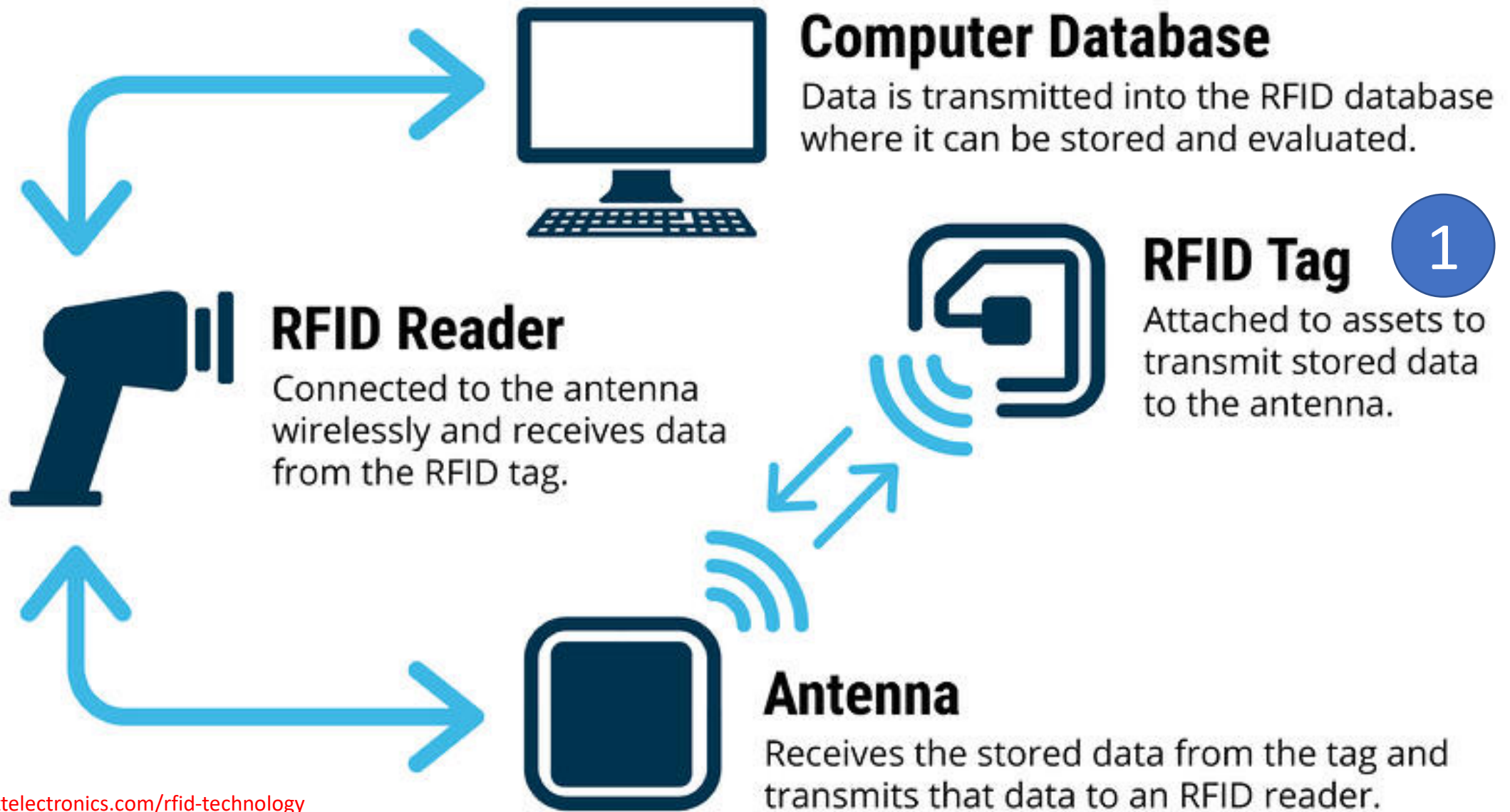
Training

Software

Buy/
lease

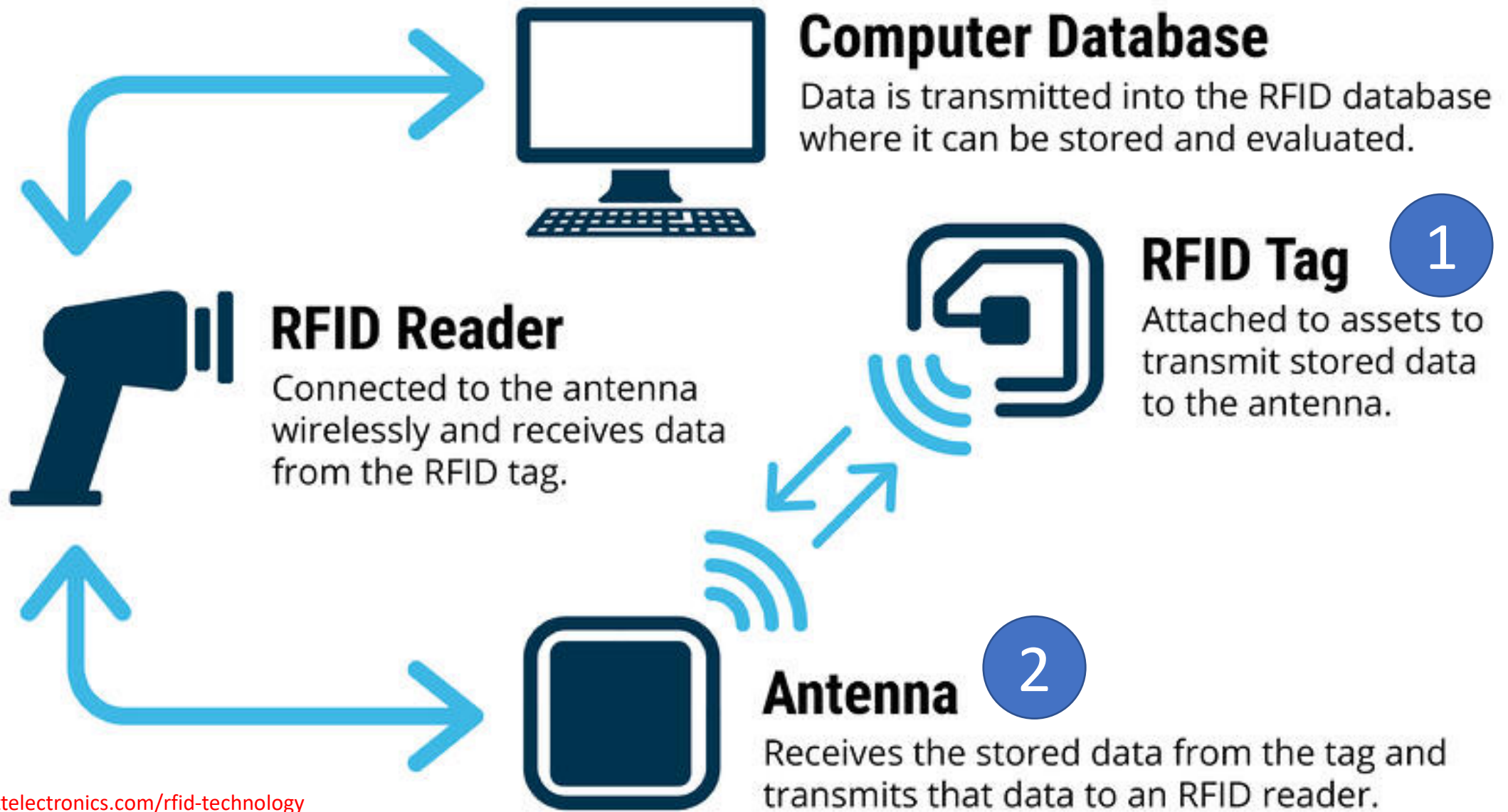
Case
studies

Down time

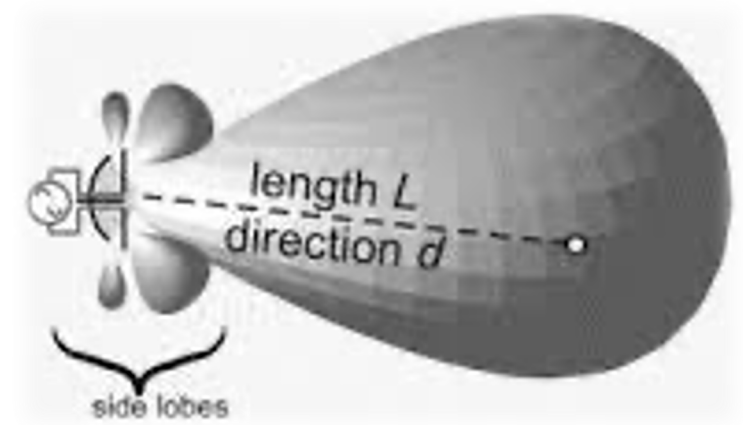
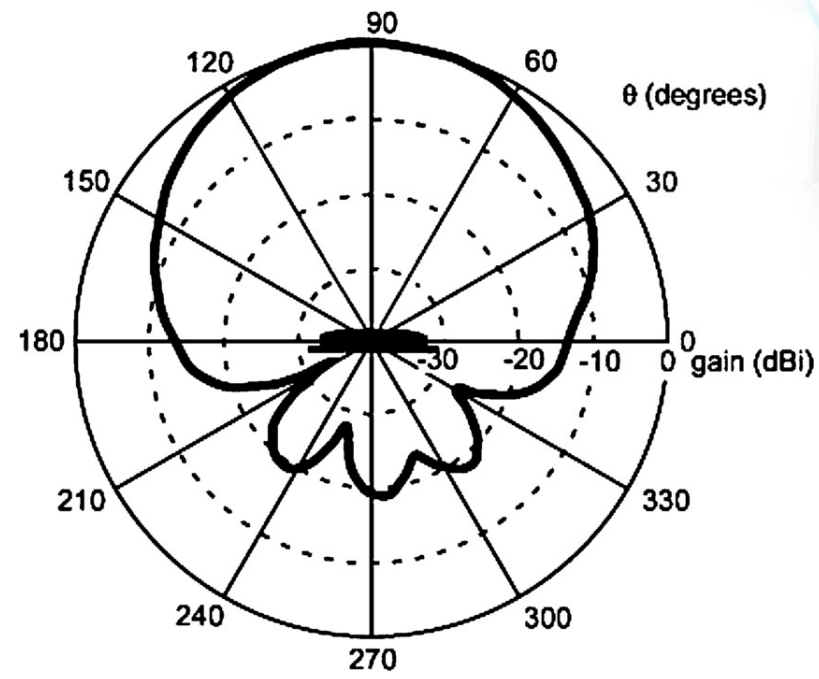
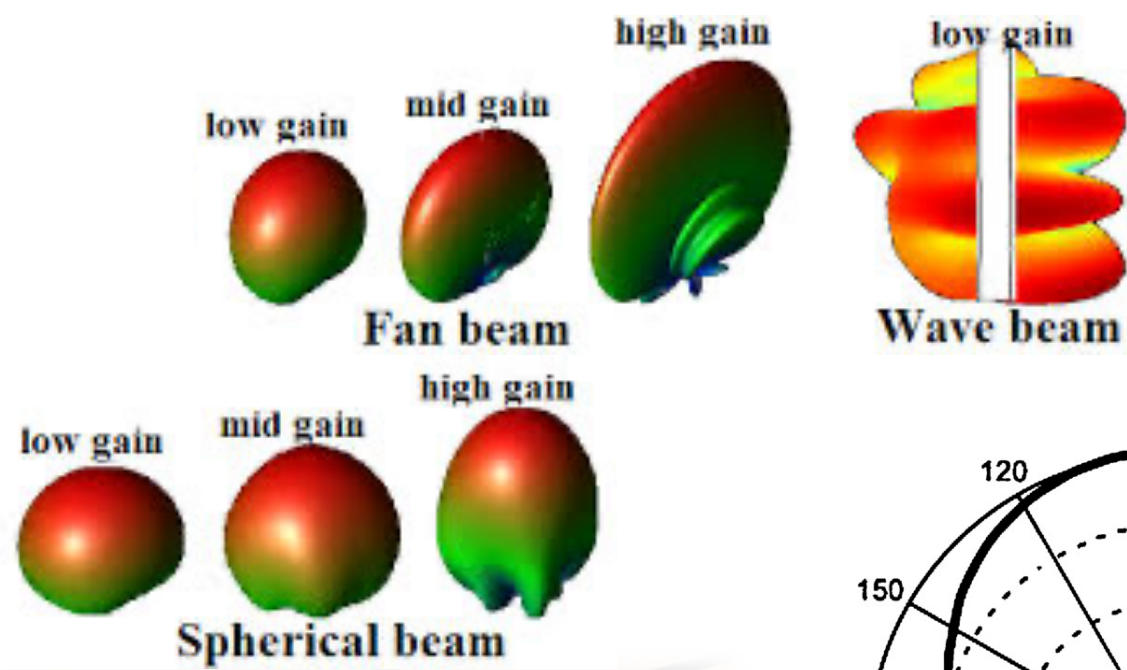


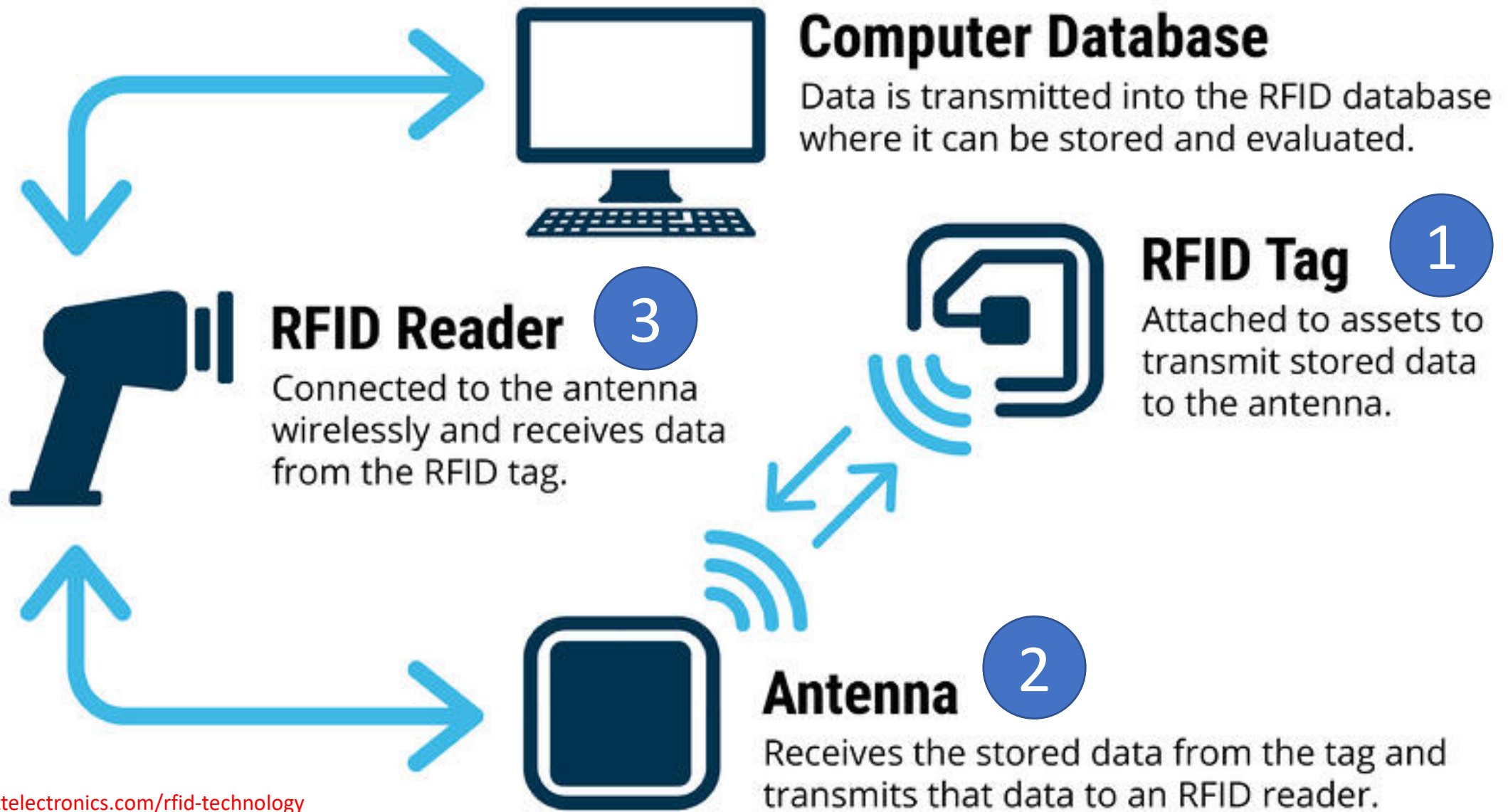
<https://blog.ttelectronics.com/rfid-technology>

Tags Requirements	Option 1	Option 2	Option 3	Option n
Approximate Price				
Life Cycle				
Read / Write Range				
Read / Write Speed				
Data Capacity				
Operating Temperatures				
Shape and Size (Form factor)				
Etc.....				



<https://blog.ttelectronics.com/rfid-technology>





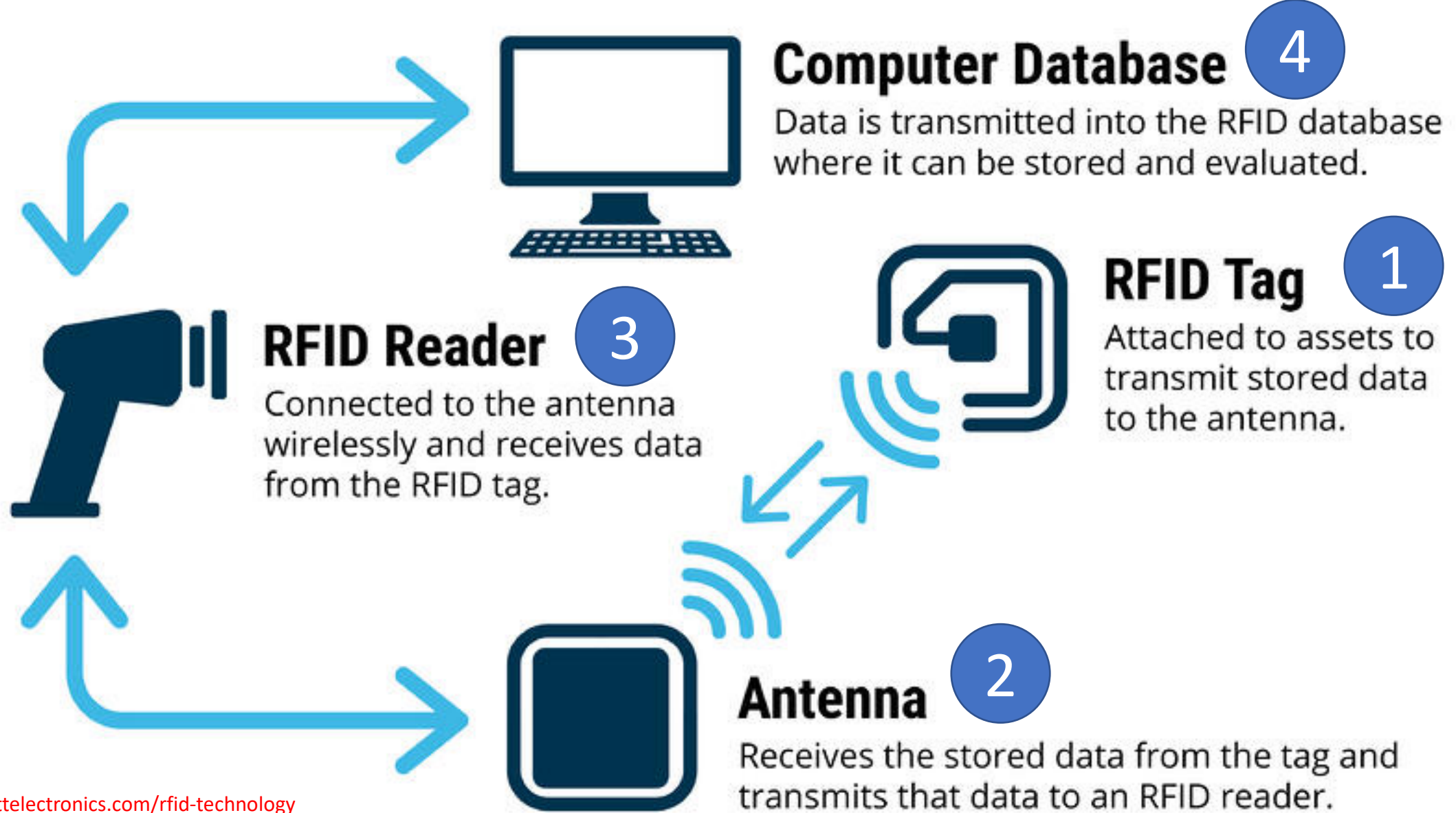
<https://blog.ttelectronics.com/rfid-technology>

AsReader

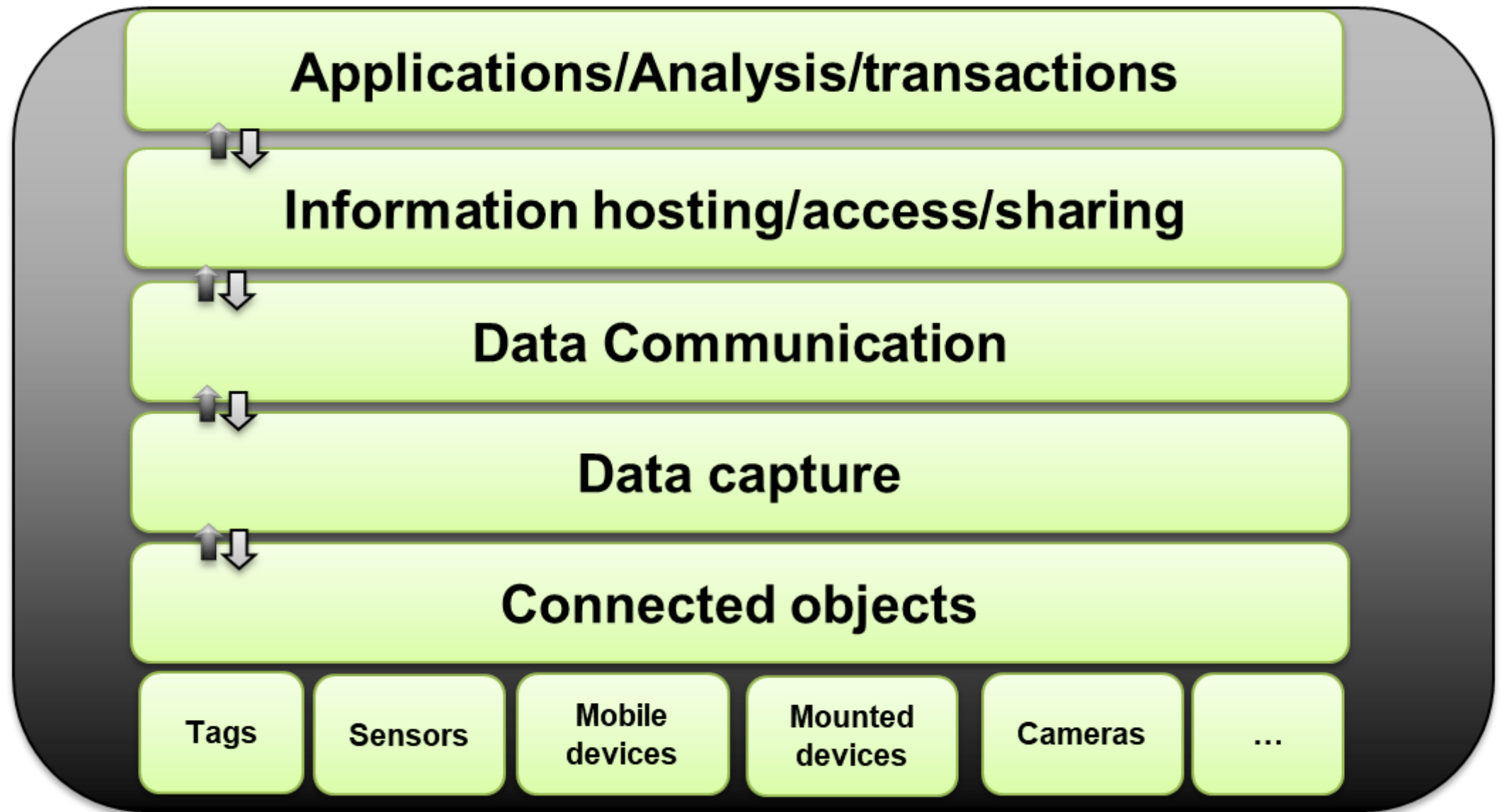
RFID SCANNER

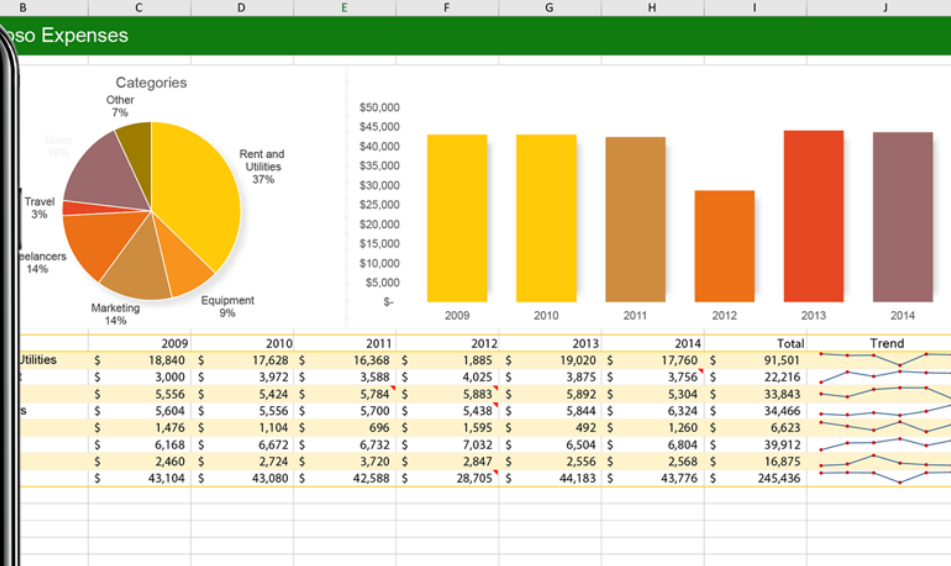
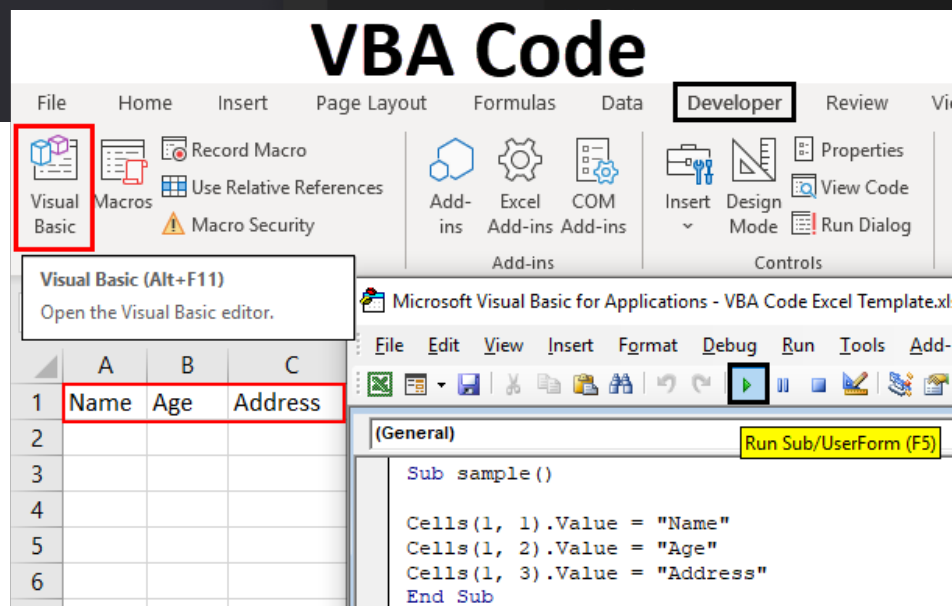
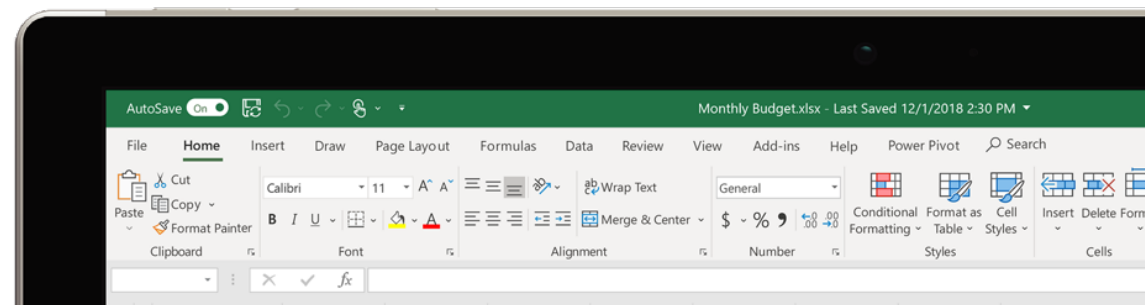
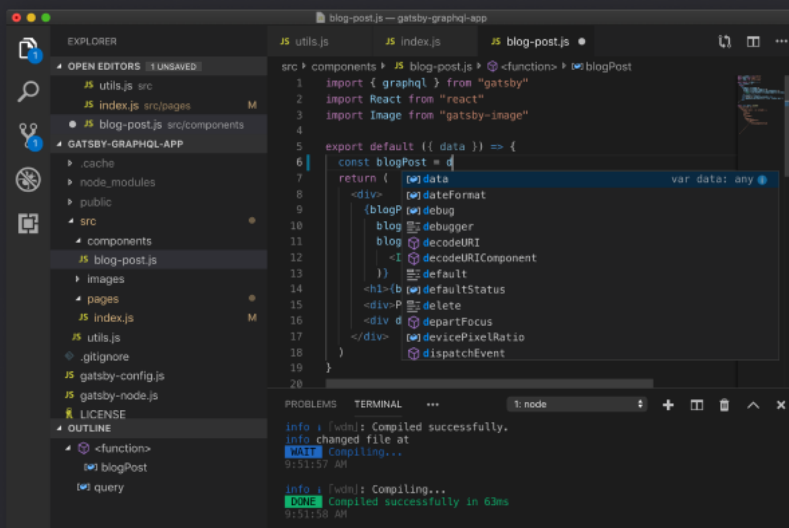
Scan all items in a whole store quickly





<https://blog.ttelectronics.com/rfid-technology>





What type of tags?

What type of readers?

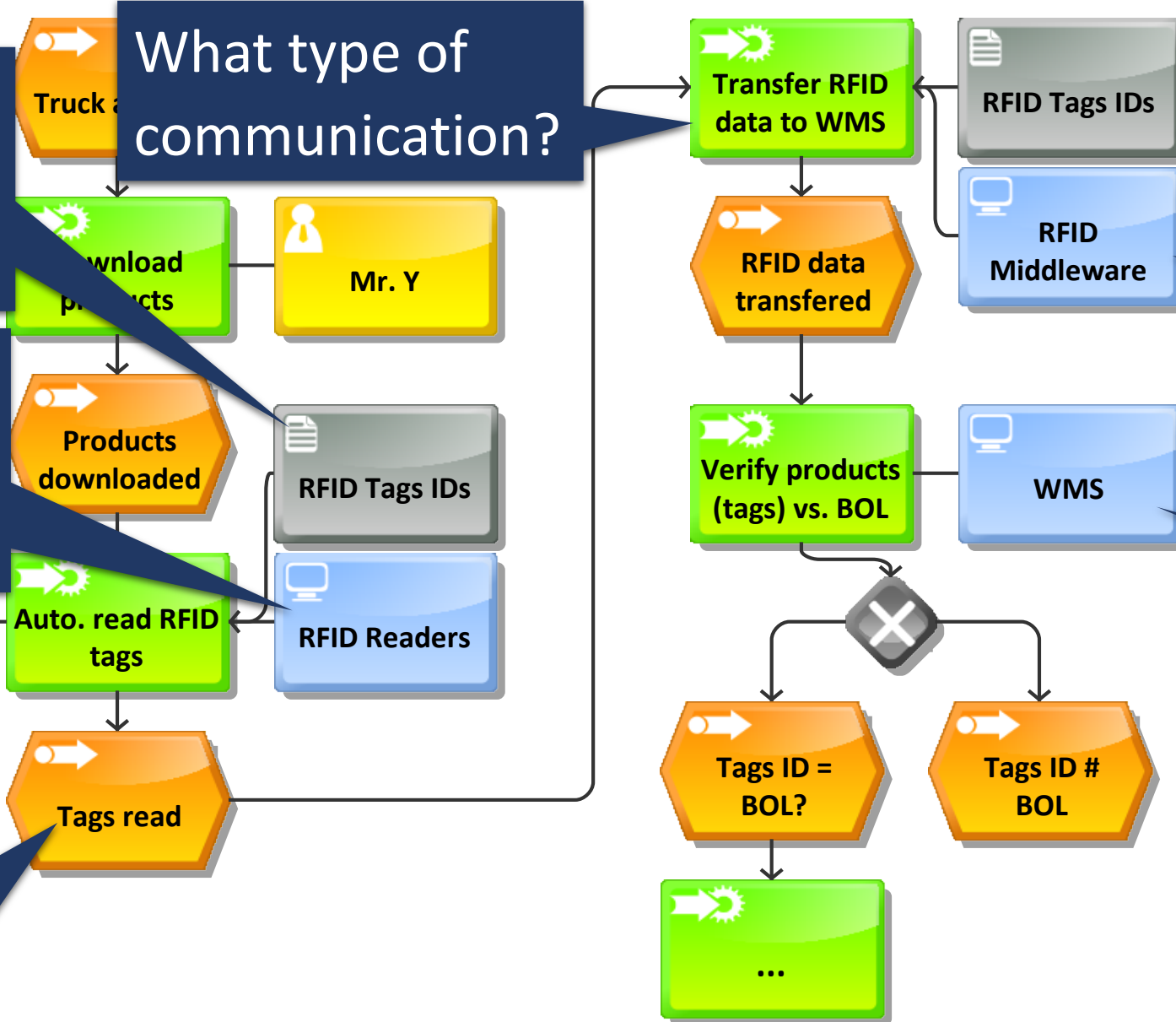
What type of feed back devices?

What type of communication?

What type of data formats?

What type of Middleware platform?

What type of integration?



Deployment rule #1

**It all starts with data accuracy ...
nothing else matters if data accuracy
is poor**

Deployment rule #2

Decide what is important to you (beyond data accuracy)

- ◎ Margins?
- ◎ Out of stock?
- ◎ Sales?
- ◎ Customer satisfaction?
- ◎ Inventory/physical position?
- ◎ Turns?

Deployment rule #3

Involve all key stakeholders early on
(depending on use cases)

- ◎Store ops?
- ◎Store management?
- ◎DC ops / DC management?
- ◎IT
- ◎Supply chain
- ◎Loss prevention

Deployment rule #4

Don't spend time on trying to answer the question: "does the technology work?"

It works! Move on! >>>

Deployment rule #5

Choose your pilot strategy

- All items in a few stores?
- A few categories in several stores?
- Always use control stores
- Rule of thumb: 50k or less in a store, tag it all (there will be some excluded categories)

Deployment rule #6

Use Cases should drive technology, NOT vice versa

- ◎*Receiving door readers
- ◎*Backroom->sales floor readers
- ◎*Handhelds
- ◎EAS portals
- ◎Point of sale
- ◎Keep it simple (save magic mirrors for later)

Deployment rule #7

Who will tag What, When, and How?

- Will you tag at DC? At source? At the store?
- Who buys tags? What type of tags? How are the tags affixed? How is item association made?

Deployment rule #8

- **For initial tagging: Big Bang Theory**
 - ◎ Throw a tagging party
 - ◎ Tag everything (i.e., within scope of pilot)
 - ◎ DO NOT use 'flow through' tagging strategy
 - ◎ Consider the environment (this is the time to alter any necessary store processes)

Deployment rule #9

Running the pilot

- ◎ Allow a couple of months with systems in place to collect baseline data
- ◎ THEN – turn on systems and run a couple of months to determine impact
- ◎ Must collect similar data in control stores (although, perhaps not as often)

Deployment rule #10

- ☐ Perform audits during the pilot
 - ☐ Execution, execution, execution
 - ☐ Understand the difference in Tagging Execution and Store Execution



So, where
do I start?

Start your business plan

Unlocking the value
"the Business Case for RFID"

Don't sell RFID as a
technology but (1)
as a solution to
business problems
(2) as a mean to
leverage on new
opportunities!



Baylor University

**RFID
JOURNAL
LIVE!**

SEPTEMBER 26 - 28, 2021

That's
the right
question!





Questions?

Kevin Berisso
University of Memphis
Automatic Identification Lab
kberisso@memphis.edu

THANK YOU

RFID
JOURNAL
LIVE!