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Kaneka

Next Challenge: **What non-food consumer ...**

Create a system to track transit "totes" for shipping products

MATH & SCIENCES   PRODUCT DEVELOPMENT   PRODUCT DESIGN   ELECTRICAL ENGINEERING   PHYSICS

MATERIALS SCIENCE   REPORTING   DATA ANALYTICS   OPERATIONS MANAGEMENT   MATERIALS   SHIPPING

TRANSPORTATION   STORED PROCEDURES   DEVICES

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$1,600   **31**   🕐 **DONE**
top 5   submissions   61 months ago

Here's the scenario:

- Three products manufactured in Michigan are loaded in 750 kg totes (see picture); blue product goes into blue totes, red product in red totes and green product in green totes.

- The totes are then loaded on a truck for Chicago, then on a train southbound to Mexico, loaded on a truck, stored in a third party warehouse prior to being shipped by truck to the Customer's manufacturing site.

- The customer might use all or part of the product and the tote is returned to the Michigan site using the return route mentioned above; it is then emptied, cleaned and ready for re-use.

- Today, tracking and reporting the locations of all totes is done manually in Excel. This is not effective and a pain.

The top submission for this challenge will win $1,000.

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Deliverables

<u>Part I:</u> **Consider the following additional info and requirements.**

- There are 162 totes, their lifetime is 15 years; all totes are similar.

- The devices (GPS tracking, sensors) must be resistant to movement (Totes on train, forklift, truck) and not be impacted when the tote is being cleaned.

- Each tote is loaded on a pallet.

- Definition of a tote's location: the physical "Transport Segment", such as: In Michigan empty, in Michigan filled, on truck Michigan, On train southbound, in Mexico warehouse, at Customer, on train northbound, ...

- Solution should be cost effective: low one-time capital and on-going operational expenses.

- The product in the tote is a thick adhesive, similar to latex caulk.

- Click here to see a picture of two totes.

<u>Part II:</u> **Submit a proposal for your tracking system covering how it works and meets each of the needs below.**

1. Measure the weight of the material in the given tote

2. Visualize and track the locations of a tote

3. Share the weight and location data from the totes to different employees in different location via automated updates (should be in .CSV or Excel spreadsheet format listing the product weight and location, one row for each tote.)

4. (Optional Bonus) Visualize the location of the totes on a map

We highly recommend formatting your report as a proposal on a .PDF file and providing resources to give us background on the technologies you suggest including.

Things to consider:

Kaneka designs the product that is inside the totes, we don't make the totes, fill them, or transport them. Your submission should be a one time modification or addition that allows us to track the tote and it's contents, without touch points along the journey.

We encourage you to include estimated costs for your solution if possible.

The totes are filled from the bottom, this is because the customer also empties them from the bottom.

> **Submissions will be graded on the following criteria:**
> - Meets Deliverables
> - Creativity
> - Clarity

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Reward Tiers

🏆

**1 Winner
will receive $1,000**

🏆

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Leaderboard

🏆
$1,000.00

Luke andraka
Virginia Polytechnic Institute and State University

🏆
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Dan Metzler
University of California at San Diego

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Pedro M
University of Providence

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$150.00

Joseph Herbert
University of Akron

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$150.00

Andrew Schneer
Tufts University

Submission questions

Title

Summarize your solution in 128 characters

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Solution

Enter your solution here...

Drag and drop photos or image files into your solution

Average: 1698 characters   1 characters

Tags: Add up to 5 tags separated by commas

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