

BEFORE THE  
POSTAL RATE COMMISSION  
WASHINGTON, D.C. 20268-0001

POSTAL RATE AND FEE CHANGES, 2006

Docket No. R2006-1

NOTICE OF UNITED STATES POSTAL SERVICE OF PROVISION OF CROSS-  
EXAMINATION EXHIBITS FOR USE DURING ORAL CROSS-EXAMINATION OF  
OFFICE OF CONSUMER ADVOCATE WITNESS ROBERTS (OCA-T-1)

Pursuant to Rule 30(e)(3) of the Commission's Rules of Practice and Procedure, the United States Postal Service hereby provides the attached cross-examination exhibits for the record for use during oral cross-examination of Office of Consumer Advocate witness Roberts during his scheduled appearance on October 27, 2006.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

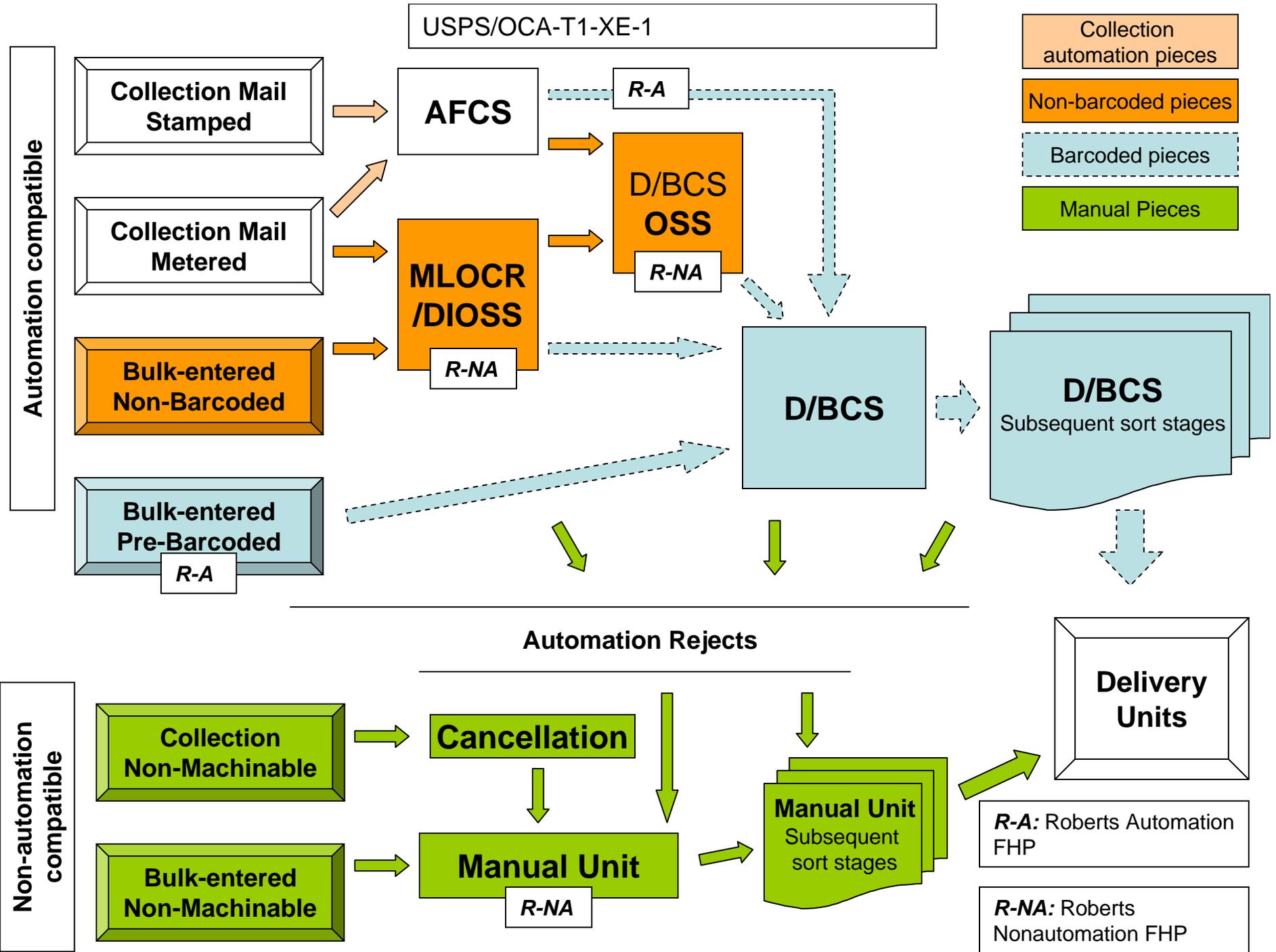
By its attorneys:

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## USPS/OCA-XE-2

Let  $C_i$  be the cost in cost component  $i$ .

Let  $V_j$  be volume of delivered mail (final output, response to USPS/OCA-T1-37(a)) for subclass  $j$ .

The marginal cost of a piece of subclass  $j$  in cost component  $i$  is:

$$(1) MC_{ij} = \partial C_i / \partial V_j = C_i \cdot \varepsilon_{ij} / V_j$$

Where  $\varepsilon_{ij}$  is the elasticity of cost in component  $i$  with respect to the volume  $V_j$ .

The "constructed" VVC is:

$$(2) VVC_{ij} = MC_{ij} \cdot V_j = C_i \cdot \varepsilon_{ij}$$

Roberts RVVC<sub>ij</sub> (Response to USPS/OCA-T1-24):

$$(3) RVVC_{ij} = C_i \cdot \eta_{is} \cdot d_{sj} \text{ (single output)}$$

$$(4) RVVC_{ij} = C_i \cdot (\eta_{is,IN} \cdot d_{s,IN,j} + \eta_{is,OUT} \cdot d_{s,OUT,j}) \text{ (two outputs)}$$

Where  $\eta_{is}$  (IN, OUT) is the elasticity of cost in component  $i$  with respect to FHP (FHPIN, FHPOUT) for shape  $s$ ; and  $d_{sj}$  (IN, OUT) is the distribution key share for subclass  $j$  in shape  $s$  FHP (FHPIN, FHPOUT).

Equivalence to constructed VVC implies

$$(5) C_i \cdot \eta_{is} \cdot d_{sj} = C_i \cdot \varepsilon_{ij} \rightarrow \eta_{is} \cdot d_{sj} = \varepsilon_{ij} \text{ (single output)}$$

$$(6) C_i \cdot (\eta_{is,IN} \cdot d_{s,IN,j} + \eta_{is,OUT} \cdot d_{s,OUT,j}) = C_i \cdot \varepsilon_{ij} \\ \rightarrow \eta_{is,IN} \cdot d_{s,IN,j} + \eta_{is,OUT} \cdot d_{s,OUT,j} = \varepsilon_{ij} \text{ (two outputs)}$$

Using the chain rule,

$$(7) \varepsilon_{ij} = \eta_{is} \cdot \theta_{sj} \text{ (single output)}$$

Where  $\theta_{sj}$  is the elasticity of shape  $s$  FHP with respect to subclass  $j$  volume.

Combining (5) and (7), equivalence of (3) to (2) requires

$$(8) \theta_{sj} = d_{sj}$$